Early Care and Education Wellness Resource Toolbox

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This resource kit is…..

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CHILDCARE WELLNESS RESOURCE TOOLBOX
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HOW TO USE THIS RESOURCE KIT

The Early Care & Education Wellness Resource Kit has been designed to be an early intervention strategy to address childhood obesity. The resources provide hand on suggestions to help early care and education providers implement the physical activity guidelines for young children. The resources were developed to make it easy to include physical activity-enhancing components into child care. The informal easy-to-use format was chosen to communicate, "This is easy, fun…and I can do it".

The kit is broken into 11 sections with materials that are ready to use in the program or as supporting resources.

Let's get started! Section 1 – Introduction contains the information regarding the why and how the early care and education providers and field can help prevent obesity.

Section 3. Physical Activity Guidelines

"What To Do in Wisconsin – Physical Activity Guidelines and Recommendations" and the Wisconsin Model Early Learning Standard, Domain I: Health and Physical Development. These two documents were included to provide guidelines and recommendations that specify beliefs and values about the health and physical development of young children in Wisconsin.

Section 4: Research Briefs have been included to inform you of the research, national initiatives and focus of the Resource Kit.

Section 5: Motor Learning and Development of 2 – 5 Year Olds.

Brain Development in Motor Learning explains the connection between brain development and motor learning. Studies on brain development indicate that the window of opportunity to developing gross motor skills is open widest during the preschool years. The implication is that if preschoolers don't acquire these fundamental skills, they may never realize their full movement potential as they age.

Physical Activity Self-Assessment (NAP SACC) is a tool for providers that allow child care programs to freely assess their own environment, policies, and practices. It will suggest key areas for improvement. This assessment piece consists of the physical activity section. Within each section there are multiple "key areas" each containing questions that relate to that area. When completed, the provider can develop a quality improvement plan for the program.

Physical Development in Young Children 2 – 5 year olds provides information for understanding fundamental motor skills. Children pass through a series of developmental sequences or levels and given appropriate instruction, practice and feedback can lead children to more proficiency and skilled movements.

Movement Awareness Terms and Descriptions are a "dictionary" for movement awareness. It helps categorize movement into types – different types of movement, space awareness, effort awareness, and relational awareness.

Physical Development Skill Assessment 2 – 5 Year Olds is designed to use as a simple assessment tool for teachers to look at children's physical development in regards to motor learning or gross motor skills.

Section 6: Program Inclusion and Integration

Adaptations …Working with Children with Disabilities describes the adaptations that can be made for simplifying skill development or increasing the skill development. This section also includes considerations for physical activity for children who participate in physical activity.

Integrating Physical Activity across the Domains includes information for supporting physical activity and areas of math, science, literacy and creativity and social/emotional development.

Literacy Connections contains a list of children's books that can be incorporated with physical activities in the curriculum.

Section 7: Physical Activity Curriculum

Physical Activity Curriculum Resource Selection Tool gives providers a tool for curriculum selection when choosing curriculums to support physical activity/movement education development.

Resource List for Physical Activities is a list of internet sites that have information for activities and resources to be able to use when developing lesson plans and supporting program development.

Sample Daily Schedules and Lesson Plans have been provided for use in determining what might be useful as planning tools.

Section 8: Program Equipment and Space

Space and Equipment Assessment is a tool that programs can use to identify space that promotes physical activity and movement features. It looks at the indoor and outdoor space in relation to movement opportunities, natural features, key features, and equipment.

Program Equipment Resources have been developed to give programs the opportunity to make home-made equipment as well as have the resources to purchase equipment to use in physical activity.

Section 9: Wisconsin Worksite Wellness Resource Kit (adapted version) is provided for programs to consider what a program can do to promote healthy lifestyles to staff and family child care providers. It also contains a list of equipment that can be used by adults. The full Worksite Wellness Resource Kit is available on the Wisconsin Department of Health's website.

Section 10: Program Implementation

Physical Activity Policy Samples and Job Description Samples have been included to use as a model for program policy development and to have the job description additions for staff accountability.

Program Implementation Tip Sheet are strategies that can be implemented to support physical activity programming in the local program.

Family Tip Sheets. These are samples of family tip sheets and includes a blank template to use in designing family tip sheets from your local program.

Section 11: Other Resources

MyPyramid preschool materials are available from USDA and can be ordered on-line. The order list has been provided.

Healthy Movement and Active Play is a 12 week curriculum that has been created for use with 3 – 5 year olds. Developed by the Creating Healthy Kids: Coalition for Activity & Nutrition, it can be used in whole or can be used as a resource and pieces adapted for use in the classroom or family program. It includes gross motor skill learning, activities, nutrition, family information, and literacy connections.

INTRODUCTION

Children's future health and well being are directly related to the development and strengthening of their large and small muscles, involvement in sensory experiences, and the practicing of healthy behavior. Good physical health and motor development allows for full participation in learning experiences. While engaging in active movement, and exploration and encountering a variety of situations and new challenges, the child's brain and body are learning to work together smoothly. When children take an active role in caring for their bodies, make appropriate food choices, and participate in physical activity they feel a sense of pride and accomplishment in their independence and develop a sound foundation for healthy growth in all other areas of development.[1]

Physical activity is a crucial part of maintaining a healthy weight and preventing obesity. Physical habits are established early in life. The early years are a key time to instill healthy physical activity habits that will last a lifetime, primarily through active play. By definition, physical activity is bodily movement of any type and may include recreational, fitness and sport activities such as jumping rope and playing soccer, as well as daily activities such as taking the stairs or raking the leaves.

Significant research has been done on physical activity in childhood and it's been learned that:

- Many children need to engage in physical activity to promote positive health outcomes
- Physical activity levels decline as children age
- Boys are more active than girls when looking at physical activity
- Children are less physically active from low-income and minority families than those that are not from represented families
- Children in urban centers participate in less physical activity than other children
- Significant parts of their day are in sedentary activities
- Children, on average spend more than 20 hours a week at screen time (television, video games and computer)[2]

Benefits of regular physical activity include:

- ✓ Reducing the risk for becoming overweight and obesity
- ✓ Reducing the risk of Type 2 diabetes
- ✓ Reducing the risk of high blood pressure
- ✓ Reducing the risk of high cholesterol levels
- ✓ Reducing the risk of cancers and other chronic diseases,
- ✓ Reducing the risk of asthma and breathing difficulties
- ✓ Being able to control their weight
- ✓ Increase muscular strength
- ✓ Maintain joint flexibility
- ✓ Promote cardiorespiratory fitness

- ✓ Increase bone density
- ✓ Link the brain and neuromuscular system
- ✓ Helps children feel better about themselves,
- ✓ Reducing the risk for depression and the effects of stress,
- ✓ Helps children prepare to be productive, healthy members of society,
- ✓ Improves overall quality of life, and
- ✓ Assists in improved academic performance.

Factors that cause obesity are:

- ✓ Biological factors - genetics
- ✓ Behaviors – diet and physical activity participation levels/types
- ✓ Environments – social and physical

Other contributors are:

- ✓ Eating patterns
- ✓ Parenting styles
- ✓ Low-birth weight
- ✓ Excessive weight gain in pregnancy
- ✓ Formula feeding
- ✓ Obese parents
- ✓ Parents w/poor health behaviors

Why should we do this work?

- 244,834 of Wisconsin children are in some form of regulated care
- Children spend on average more than 31 hours per week in early childhood settings
- Eating and physical activity habits develop early
- 29.3% of Wisconsin children 2-4 participating in WIC are overweight or obese
- 30% of children ages 2-4 years, are overweight or obese, and rate increase progressively with age
- 25.1% of Wisconsin high school students are considered overweight or obese (YRBS)
- 64.9% of Wisconsin adults are considered overweight or obese (BRFSS)
- 1 in 10 adult deaths account for insufficient activity levels.

Obesity during youth increases the risk of adult obesity. Obesity is also associated with negative healthy conditions prior to adulthood. By one estimate, 50% of obese elementary school children have at least one cardiovascular disease risk factor, and 25% have at least two. Daily physical activity is an important part of preventing excessive weight gain and childhood obesity. Reports suggest that children are not meeting daily recommendations for physical activity and children are spending over 70% of their time in early care

and education sedentary, i.e. sitting or lying down. Excluding nap time, children are sedentary 83% of the time. Children may only spend about 2% - 3% of the time in moderate to vigorous physical activity[3].

Studies show that early childhood settings have strong potential to curb the continued rise in childhood obesity rates by promoting the following:

- Increase Physical Activity
- Decrease Television/Screen Time
- Increase Breastfeeding
  (Initiation, Duration, & Exclusivity)
- Increase Consumption of Fruits and Vegetables
- Decrease Consumption of High-Energy Dense Foods (e.g. candy, chips, cookies)
- Decrease Consumption of Sugar- Sweetened Beverages.

OVERVIEW
WISCONSIN EARLY CARE AND EDUCATION WELLNESS RESOURCE KIT

The Wisconsin Early Care and Education Wellness Resource Kit has been designed to provide resource for providers to use in the efforts to reduce childhood obesity and children's risk for developing obesity by encouraging a healthy early care and education environment through targeting providers in the field. The resource kit is designed to provide low-cost, no cost strategies and resources to providers to promote physical activity in children 2-5 years of age in the care of providers. It also seeks to educate providers about the importance of healthy living to support positive role modeling and individual wellness.

[1] *Wisconsin Model Early Learning Standards*. 2008. Wisconsin Department of Public Instruction.
[2] *Active Start. A Statement of Physical Activity Guideline For Children From Birth to Age 5.* 2nd Ed. National Association for Sport and Physical Education.
[3] *Directly Observed Physical Activity Levels in Preschool Children.* Pate, R.R., K. Mciver, M. Dowda, W.H. Brown, A. Cheryl. 2008. Journal of School Health. 78:438-44.
Preventing Childhood Obesity in Early Care and Education Programs. Caring for Our Children: National Health and Safety Performance Standards. 2010.

What to Do: **Early Childhood Care & Education Recommendations to Increase Moderate to Vigorous Physical Activity. (8-18-10)**

	Infant (0 -1 year)	Toddler (1-3 years)	Pre-school (age 3–K)
Screen time	**0 hours** (AAP)	**0 hours under age 2** **<30 minutes once a week for 2 year olds** and limited to educational programs or programs that actively engage child movement.	**<30 minutes once a week** and limited to educational programs or programs that actively engage child movement.
Physical Activity	(No time amount specified.) Provide a safe, nurturing, and minimally structured play environment. (AAP)	Shall engage in no less than **60 - 90 minutes** per 8 hour day at child care of daily physical activity.	Shall engage in no less than **90 - 120 minutes** per 8 hour day at child care of daily physical activity.
(Unstructured)		Shall engage in no less than **30 minutes** per 8 hour day at child care of daily unstructured physical activity. Children should be physically active in at least half of the transition times during the day.	Shall engage in no less than **60 minutes** per 8 hour day at child care of daily unstructured physical activity. Children should be physically active in at least half of the transition times during the day.
(Structured/ Teacher-Led)		Shall engage in no less than **30 minutes** of structured/teacher-led physical activity, at least 2 times per day accumulated throughout the course of the day at child care. (NASPE)	Shall engage in no less than **60 minutes** of structured/teacher-led physical activity, at least 2 times per day accumulated throughout the course of the day at child care. (NASPE)
	Caregivers shall interact with infants in daily physical activities that encourage active exploration (NASPE)	Shall **not be sedentary for more than 60 minutes or seated for more than 15 minutes at a time**, except when sleeping.	Shall **not be sedentary for more than 60 minutes or seated for more than 15 minutes at a time,** except when sleeping.
	Caregivers shall place infants in safe settings that facilitate physical activity, do not restrict movement for prolonged periods of time, promote the development of movement skills, and allow infants to perform small and large muscle activities. (NASPE)	Shall have adequate indoor and outdoor space, equipment for active play, and opportunities to develop and practice gross and fine motor skills. Active play should never be withheld from children who misbehave. However, children with out-of-control behavior may need minutes to calm themselves to settle down before resuming activity.	Shall have adequate indoor and outdoor space, equipment for active play, and opportunities to develop and practice gross and fine motor skills. Active play should never be withheld from children who misbehave. However, children with out-of-control behavior may need minutes to calm themselves to settle down before resuming activity.
Outdoor Play	Shall **play outdoors daily** when weather and air quality conditions do not pose a significant health risk. Infants shall be dressed appropriately for the weather.	Shall **play outdoors 2 – 3 times daily (60 – 90 minutes total per day)** when weather and air quality conditions do not pose a significant health risk. Toddlers shall be dressed with appropriate footwear and dressed appropriately for the weather.	Shall **play outdoors 2 – 3 times daily (60 – 90 minutes total per day)** when weather and air quality conditions do not pose a significant health risk. Children shall be dressed with appropriate footwear and dressed appropriately for the weather.
	Outdoor play for infants may include riding in a carriage or stroller; however, infants shall be permitted daily opportunities for independent gross motor play outdoors. (AAP)		Caregivers should ensure that children walk distances and reduce sedentary transportation by stroller. (AAP)

Adapted from the National Policy & Legal Analysis Network to Prevent Childhood Obesity (NPLAN) ***Model Physical Activity Standards for Child-Care Providers***. The model standards combined recommendations from several sources, primarily from the National Association for Sport and Physical Education (NASPE) standards and the American Academy of Pediatrics (AAP) recommendations. Others included: Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Out-of-Home Child Care- Preventing Childhood Obesity in Early Care and Education Programs (a collaborative project of the AAP, the American Public Health Association, and the National Resource Center for Health and Safety in Child Care), and the New York City Department of Health and Mental Hygiene Board of Health Day Care Regulations.

Wisconsin Model Early Learning Standards: Guiding Principles

The Wisconsin Model Early Learning Standards Steering Committee has established the following Guiding Principles to inform the development and application of the Wisconsin Model Early Learning Standards in Wisconsin. These guiding principles reflect the knowledge base in scientific research, our values, and our commitment to young children and families.

All children are capable and competent.

Development and learning begins at birth, for all children and in all settings. The Wisconsin Model Early Learning Standards support practices that promote development and protect young children from the harm that results from inappropriate expectations. In this, they are aligned with ethical principles of the early childhood profession.

Early relationships matter.

Beginning at birth, a child forms relationships with adults who will guide their learning and development. Especially during the earliest years of a child's life from birth to age 3, a child's growth and development is shaped within the context of those relationships. Positive relationships are essential for the development of personal responsibility, capacity for self-regulation, for constructive interactions with others, and for fostering academic functioning and mastery. Warm, sensitive, and responsive interactions help children develop a secure, positive sense of self and encourage them to respect and cooperate with others.

A child's early learning and development is multidimensional.

Developmental domains are highly interrelated. The Wisconsin Model Early Learning Standards reflect the interconnectedness of the domains of children's development: social and emotional development, approaches to learning, language development and communication, health and physical development, and cognition and general knowledge.

Expectations for children must be guided by knowledge of child growth and development.

The Wisconsin Model Early Learning Standards are based on research about the processes and sequences of young children's learning and development, and the conditions under which children develop to their fullest potential.

Children are individuals who develop at various rates.

The Wisconsin Model Early Learning Standards recognize that there are individual rates of development and learning across any age range.

Children are members of cultural groups that share developmental patterns.

The Wisconsin Model Early Learning Standards acknowledge that children's development and learning opportunities reflect the cultural and linguistic diversity of children, families and environments.

Children exhibit a range of skills and competencies within any domain of development.

The Wisconsin Model Early Learning Standards support the development of optimal learning experiences that can be adapted for individual developmental patterns.

Children learn through play and the active exploration of their environment.

The Wisconsin Model Early Learning Standards reflect the belief that children should be provided with opportunities to explore and apply new skills through child-initiated and teacher-initiated activities, and through interactions with peers, adults and materials. Teachers and families can best guide learning by providing these opportunities in natural, authentic contexts. Positive relationships help children gain the benefits of instructional experiences and resources.

Parents are children's primary and most important caregivers and educators.

Families, communities and schools all have significant roles to play in terms of what opportunities are available to children, and how well a child is able to take advantage of those learning opportunities. Children who see themselves as highly valued are more likely to feel secure, thrive physically, get along with others, learn well, and feel part of a community.

"*Wisconsin Model Early Learning Standards" with Introduction.* Wisconsin Department of Public Instruction. 2008.

Wisconsin Early Childhood Collaborating Partners. http://www.collaboratingpartners.com.

SOLVING THE PROBLEM OF CHILDHOOD OBESITY WITHIN A GENERATION

White House Task Force on Childhood Obesity
Report to the President

MAY 2010

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Letter to the President

Dear Mr. President,

I am pleased to present you with the White House Task Force on Childhood Obesity's action plan for solving the problem of childhood obesity in a generation.

Parents across America are deeply concerned about their children's health and the epidemic of childhood obesity. One out of every three children is now overweight or obese, a condition that places them at greater risk of developing diabetes, heart disease, and cancer over the course of their lives. This is not the future we want for our children, and it is a burden our health care system cannot bear. Nearly $150 billion per year is now being spent to treat obesity-related medical conditions.

Fortunately, there are clear, concrete steps we can take as a society to help our children reach adulthood at a healthy weight. As you requested in the Memorandum you signed on February 9, our new interagency Task Force on Childhood Obesity has spent the past 90 days carefully reviewing the research, and consulting experts as well as the broader public, to produce a set of recommended actions that, taken together, will put our country on track to solving the problem of childhood obesity.

We heard from a broad array of Americans, and received more than 2,500 public comments with specific and creative suggestions. Twelve Federal agencies participated actively in the Task Force, and provided their ideas and expertise. They include the Departments of Agriculture, Defense, Education, Health and Human Services, Housing and Urban Development, Interior, Justice, and Transportation, as well as the Corporation for National and Community Service, the Environmental Protection Agency, the Federal Communications Commission, and the Federal Trade Commission.

Our recommendations focus on the four priority areas set forth in the Memorandum, which also form the pillars of the First Lady's *Let's Move!* campaign: (1) empowering parents and caregivers; (2) providing healthy food in schools; (3) improving access to healthy, affordable foods; and (4) increasing physical activity. In addition, we have included a set of recommendations for actions that can be taken very early in a child's life, when the risk of obesity first emerges.

We cannot succeed in this effort alone. Our recommendations are not simply for Federal action, but also for how the private sector, state and local leaders, and parents themselves can help improve the health of our children. The Task Force will move quickly to develop a strategy for implementing this plan, working in partnership with the First Lady to engage stakeholders across society. Indeed, many Americans — including leaders in the public and private sectors — have already volunteered to join this effort, and are ready and waiting to put this plan in action.

Sincerely,

Melody Barnes

Chair, Task Force on Childhood Obesity, and Director, Domestic Policy Council

The Challenge We Face

The childhood obesity epidemic in America is a national health crisis. One in every three children (31.7%) ages 2-19 is overweight or obese.[1] The life-threatening consequences of this epidemic create a compelling and critical call for action that cannot be ignored. Obesity is estimated to cause 112,000 deaths per year in the United States,[2] and one third of all children born in the year 2000 are expected to develop diabetes during their lifetime.[3] The current generation may even be on track to have a shorter lifespan than their parents.[4]

Along with the effects on our children's health, childhood obesity imposes substantial economic costs. Each year, obese adults incur an estimated $1,429 more in medical expenses than their normal-weight peers.[5] Overall, medical spending on adults that was attributed to obesity topped approximately $40 billion in 1998, and by 2008, increased to an estimated $147 billion.[6] Excess weight is also costly during childhood, estimated at $3 billion per year in direct medical costs.[7]

Childhood obesity also creates potential implications for military readiness. More than one quarter of all Americans ages 17-24 are unqualified for military service because they are too heavy.[8] As one military leader noted recently, "We have an obesity crisis in the country. There's no question about it. These are the same young people we depend on to serve in times of need and ultimately protect this nation."[9]

While these statistics are striking, there is much reason to be hopeful. There is considerable knowledge about the risk factors associated with childhood obesity. Research and scientific information on the causes and consequences of childhood obesity form the platform on which to build our national policies and partner with the private sector to end the childhood obesity epidemic. Effective policies and tools to guide healthy eating and active living are within our grasp. This report will focus and expand on what we can do together to:

1. create a healthy start on life for our children, from pregnancy through early childhood;
2. empower parents and caregivers to make healthy choices for their families;
3. serve healthier food in schools;
4. ensure access to healthy, affordable food; and
5. increase opportunities for physical activity.

What is Obesity?

Obesity is defined as excess body fat. Because body fat is difficult to measure directly, obesity is often measured by body mass index (BMI), a common scientific way to screen for whether a person is underweight, normal weight, overweight, or obese. BMI adjusts weight for height,[10] and while it is not a perfect indicator of obesity,[11] it is a valuable tool for public health.

Adults with a BMI between 25.0 and 29.9 are considered overweight, those with a BMI of 30 or more are considered obese, and those with a BMI of 40 or more are considered extremely obese.[12] For children and adolescents, these BMI categories are further divided by sex and age because of the changes that occur

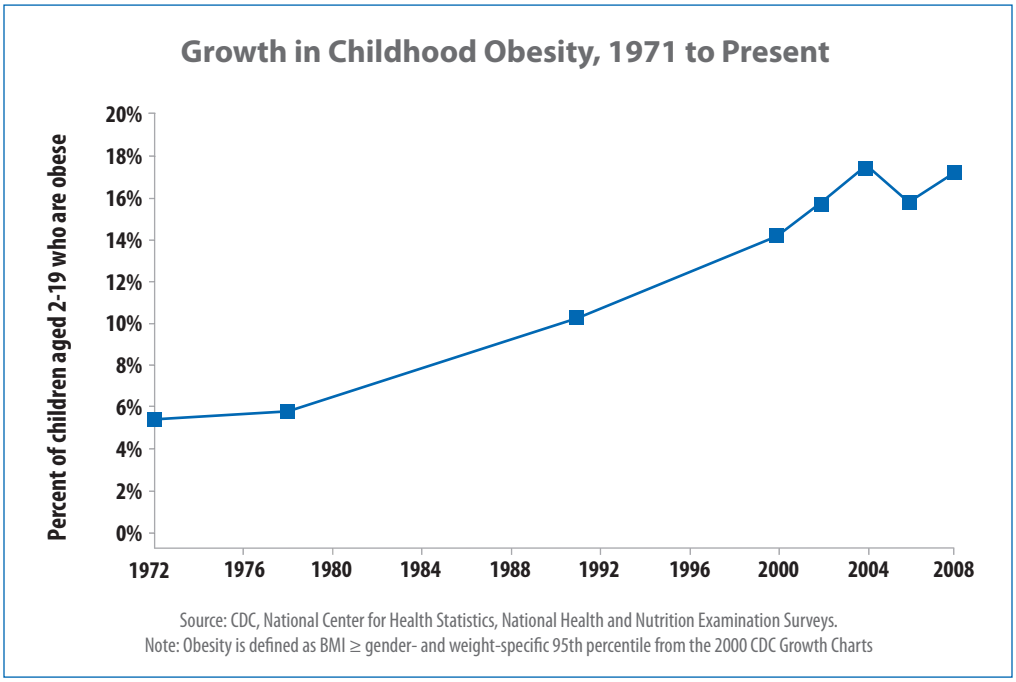
during growth and development. Growth charts from the Centers for Disease Control and Prevention (CDC) are used to calculate children's BMI. Children and adolescents with a BMI between the 85th and 94th percentiles are generally considered overweight, and those with a BMI at or above the sex-and age-specific 95th percentile of population on this growth chart are typically considered obese.

Determining what is a healthy weight for children is challenging, even with precise measures. BMI is often used as a screening tool, since a BMI in the overweight or obese range often, but not always, indicates that a child is at increased risk for health problems. A clinical assessment and other indicators must also be considered when evaluating a child's overall health and development.[13]

Who Does Obesity Impact? Prevalence and Trends

By gaining a deeper understanding of individuals who are impacted by obesity, we can better shape policies to combat it. Since 1980, obesity has become dramatically more common among Americans of all ages. Prevalence estimates of obesity in the U.S. are derived from the National Health and Nutrition Examination Survey (NHANES), conducted by the National Center for Health Statistics of the CDC. Between the survey periods 1976–80 and 2007–08, obesity has more than doubled among adults (rising from 15% to 34%), and more than tripled among children and adolescents (rising from 5% to 17%).[14]

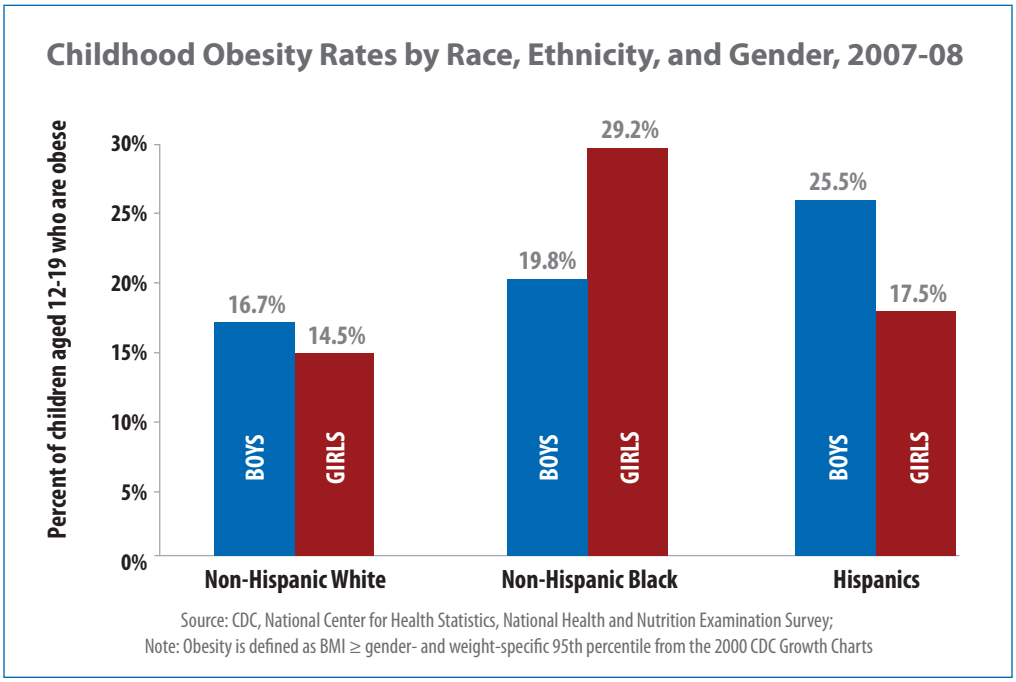
The rapid increase in childhood obesity in the 1980s and 1990s has slowed, with no significant increase in recent years.[15] However, among boys ages 6–19, very high BMI (at or above the 97th percentile) became more common between 1999–2000 and 2007–08; about 15% of boys in this age group are in this category.[16]



Source: CDC, National Center for Health Statistics, National Health and Nutrition Examination Surveys.
Note: Obesity is defined as BMI ≥ gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts

Race/Ethnic Disparities

Childhood obesity is more common among certain racial and ethnic groups than others. Obesity rates are highest among non-Hispanic black girls and Hispanic boys. Obesity is particularly common among American Indian/Native Alaskan children. A study of four year-olds found that obesity was more than two times more common among American Indian/Native Alaskan children (31%) than among white (16%) or Asian (13%) children. This rate was higher than any other racial or ethnic group studied.[17]



Socioeconomic Disparities

Among adults, obesity rates are sometimes associated with lower incomes, particularly among women. Women with higher incomes tend to have lower BMI, and the opposite is true, those with higher BMI have lower incomes.[18] A study in the early 2000s found that about 38% of non-Hispanic white women who qualified for the Supplemental Nutrition Assistance Program (known then as food stamps), were obese, and about 26% of those above 350% of the poverty line were obese.[19] Also, a recent study of American adults found lower rates of obesity among individuals with more education. Specifically, the study found that nearly 35% of adults with less than a high school degree were obese, compared to 21% of those with a bachelor's degree or higher.[20]

The relationship between income and obesity in children is less consistent than among adult women,[21]and sometimes even points in the opposite direction. Another study from the early 2000s found that only among white girls were higher incomes associated with lower BMI. Among African-American girls, the prevalence of obesity actually increased with higher socioeconomic status, suggesting that efforts to reduce ethnic disparities in obesity must target factors other than income and education, such as environmental, social, and cultural factors.[22]

Regional Disparities

Across the country, the prevalence of obesity has been found to be highest in southeast states such as Alabama, Mississippi, South Carolina, Tennessee, and West Virginia, as well as in Oklahoma. It is lowest in Colorado.[23] Another study showed obesity was most common among adults in the Midwest and the South, as well as among adults who did not live in metropolitan areas.[24]

How Does Obesity Impact Our Health?

Obese adults have an increased risk for many diseases, including type 2 diabetes, heart disease, some forms of arthritis, and several cancers.[25] Overweight and obese children are more likely to become obese adults.[26] Specifically, one study found that obese 6-8 year-olds were approximately ten times more likely to become obese adults than those with lower BMIs.[27] The association may be stronger for obese adolescents than younger children.[28] Obese children are also more likely to have increased risk of heart disease.[29] One study found that approximately 70% of obese children had high levels (greater than 90th percentile) of at least one key risk factor for heart disease, and approximately 30% had high levels of at least two risk factors.[30] There is evidence that heart disease develops in early childhood and is exacerbated by obesity,[31] and people as young as 21 have been found to display early physical signs of heart disease due to obesity.[32] Obese children are also more likely to develop asthma.[33]

Obesity is the most significant risk factor for type 2 diabetes, a disease once called "adult onset diabetes" because it occurred almost exclusively in adults until childhood obesity started to rise substantially. The number of hospitalizations for type 2 diabetes among Americans in their 20s has gone up substantially, for example.[34] A 2001 study found that more than 75% of children ages 10 and over with type 2 diabetes were obese.[35] Type 2 diabetes occurs more frequently among some racial and ethnic minority groups, and rates among American Indians are particularly high.[36]

In addition to the physical health consequences, severely obese children report a lower health-related quality of life (a measure of their physical, emotional, educational, and social well-being). In fact, one study found that they have a similar quality of life as children diagnosed with cancer.[37] Childhood obesity is a highly stigmatized condition, often associated with low self-esteem, and obese children are more likely than non-obese children to feel sad, lonely, and nervous.[38] Obesity during childhood is also associated with some psychiatric disorders, including depression and binge-eating disorder, which may both contribute to and be adversely impacted by obesity.[39]

What Causes Obesity?

Early Life

A child's risk of becoming obese may even begin before birth. Pregnant women who use tobacco, gain excessive weight, or have diabetes give birth to children who have an increased risk of being obese during their preschool years.[40] Furthermore, although the evidence is not conclusive,[41] rapid weight gain in early infancy has been shown to predict obesity later in life.[42] Racial and ethnic differences in obesity may also be partly explained by differences in risk factors during the prenatal period and early life.[43]

Studies show that early influences can affect obesity rates. The increased occurrence of obesity among children of obese parents suggests a genetic component.[44] Multiple twin and adoption studies also indicate a strong genetic component to obesity.[45] However, genes associated with obesity were present in the population prior to the current epidemic; genes only account for susceptibility to obesity and generally contribute to obesity only when other influences are at work. Genetic susceptibility to obesity is significantly shaped by the environment.[46] In addition to genetic factors, recent research has focused on other factors, such as maternal nutrition, environmental toxins, and the prenatal environment, which may shape later risk for childhood obesity.

Environmental Factors During Childhood

There have been major changes in Americans' lifestyles over the last 30 years, as childhood obesity rates have been rising. This includes what and where we eat. Given the pace of modern life, Americans now consume more fast-food and sugar-sweetened beverages, eat outside the home more frequently,[47] and spend less time enjoying family meals. In addition, prepared and processed food is easily accessible and inexpensive. These items are also heavily promoted, as evidenced in a Federal Trade Commission (FTC) report revealing that at least $1.6 billion is spent annually on food advertising directed to children and adolescents.[48] All this adds up to poor eating habits. For example, 13% of the daily caloric intake for 12-19 year-olds now comes from sugar-sweetened beverages.[49]

At the same time, adults and children alike are getting less physical activity. Some schools have cut back on activities like physical education and recess, in part due to budget pressures at the state and local level. And children are increasingly driven to school by car or bus, rather than walking or biking.[50] In part, these shifts in transportation reflect changes in community design. Physical activity is higher in more "connected" communities that provide safe and reliable access to public transportation, as well as other forms of active transport like biking and walking.[51]

Meanwhile, "screen time" has increased, including television viewing, which is directly associated with childhood and adult obesity.[52] Among children, watching television or time spent on computers or gaming systems takes away from engaging in physical activity like organized sports or informal playing. It also has a more harmful effect on healthy eating habits; as children watch television, they are more likely to snack, including on the foods advertised.[53] In addition, screen time has been associated with children getting less and poorer quality sleep,[54] and insufficient sleep has been linked to a heightened risk of obesity.[55]

What Can We Do?

While additional studies to identify the precise causes of obesity will be useful, we do not need to wait to identify specific actions that we can take as a society to prevent obesity. There are many examples of effective therapies for diseases whose cause has not been fully identified. For example, remission rates of acute lymphocytic leukemia in children have been dramatically improved over the last 20 years, although the causes of the disease remain uncertain.

No single action alone will reverse the childhood obesity epidemic, although there is no question that improving eating habits and increasing physical activity are two critical strategies. As with tobacco prevention and control, comprehensive, multi-sectoral approaches are needed to address the many

behavioral risk factors associated with obesity.[56] These risk factors fall into three general categories: (1) material incentives, such as the cost of food or the desire to avoid poor health; (2) social norms, such as the nutritional and physical activity habits of friends and family, which influence us greatly; and (3) the broader environment, such as whether grocery stores and playgrounds are nearby or far away. Changes in each of these risk factors are possible. For example, with sound information, parents and caregivers will be able to seek out the most nutritious foods to improve their children's health; changes in social norms can be brought about through movements such as the successful seatbelt buckling campaigns of the late 20th century; and changes can be made in the broader environment by eliminating "food deserts" or "playground deserts."

In many parts of the country, we already have a head start, and initiatives that are already underway will provide instructive lessons. Comprehensive, community-wide efforts to reduce obesity have recently been initiated by both the public and private sectors. The American Recovery and Reinvestment Act of 2009 included $1 billion in funding for prevention and wellness investments, more than half of which was directed to prevention strategies to reduce tobacco use and obesity rates. Specifically, $373 million supported direct community-based interventions and $120 million supported state-based efforts in all 50 states and 25 communities in urban, rural, and tribal areas. Funds to support comprehensive strategies were awarded to states in February and to communities in March. The recently-enacted Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (collectively referred to as the "Affordable Care Act") provides for additional investments in chronic disease and improving public health, which could include community-based prevention strategies. In addition, the philanthropic sector has been leading the way with stepped-up, focused investments. For example, the Robert Wood Johnson Foundation has created a "Healthy Kids, Healthy Communities" initiative that is funding 50 communities to implement strategies to prevent childhood obesity,[57] and the California Endowment recently launched a large-scale "Building Healthy Communities" project in 14 communities that will include a focus on childhood obesity prevention.[58]

Reducing childhood obesity does not have to be a costly endeavor, however. And indeed, in many communities it simply cannot be. Times are tough, and federal, state, local, and family budgets are all feeling squeezed. But a great deal can be accomplished without significant expenditures, and some steps may ultimately save money.[59] While many of the recommendations in this report will require additional public resources, creative strategies can also be used to redirect resources or make more effective use of existing investments.

In total, this report presents a series of 70 specific recommendations, many of which can be implemented right away. Summarizing them broadly, they include:

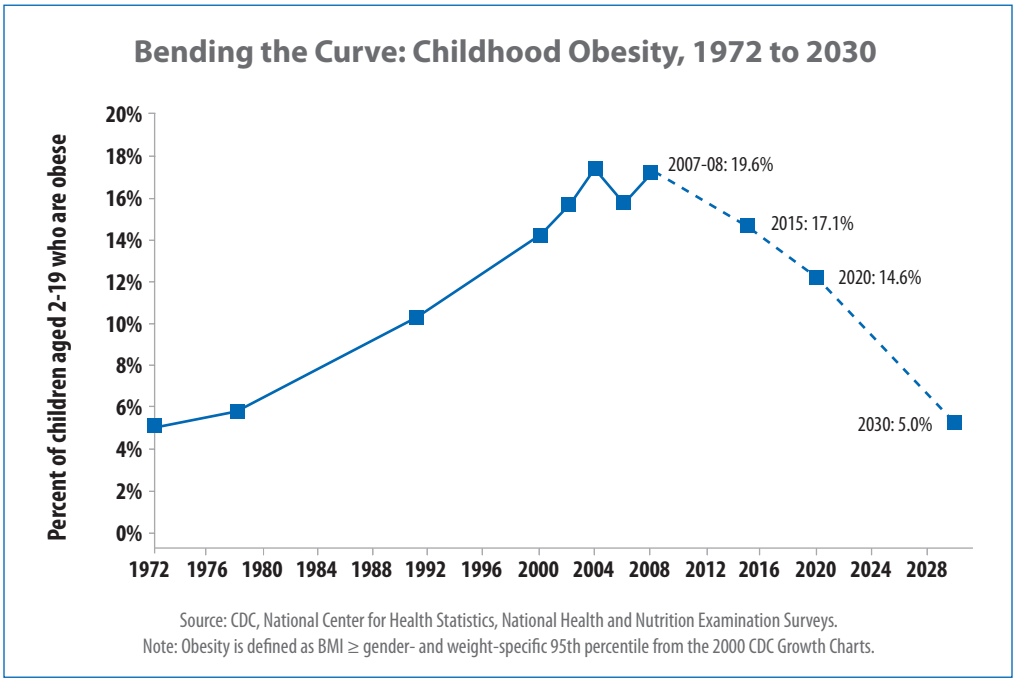
- **Getting children a healthy start on life**, with good prenatal care for their parents; support for breastfeeding; adherence to limits on "screen time"; and quality child care settings with nutritious food and ample opportunity for young children to be physically active.
- **Empowering parents and caregivers** with simpler, more actionable messages about nutritional choices based on the latest *Dietary Guidelines for Americans*; improved labels on food and menus that provide clear information to help make healthy choices for children; reduced marketing of unhealthy products to children; and improved health care services, including BMI measurement for all children.

- **Providing healthy food in schools**, through improvements in federally-supported school lunches and breakfasts; upgrading the nutritional quality of other foods sold in schools; and improving nutrition education and the overall school environment.
- **Improving access to healthy, affordable food**, by eliminating "food deserts" in urban and rural America; lowering the relative prices of healthier foods; developing or reformulating food products to be healthier; and reducing the incidence of hunger, which has been linked to obesity.
- **Getting children more physically active**, through quality physical education, recess, and other opportunities in and after school; addressing aspects of the "built environment" that make it difficult for children to walk or bike safely in their communities; and improving access to safe parks, playgrounds, and indoor and outdoor recreational facilities.

Many of these recommendations are for activities to be undertaken by federal agencies. All such activities are subject to budgetary constraints, including the weighing of priorities and available resources by the Administration in formulating its annual budget and by Congress in legislating appropriations.

How Will We Know We Have Succeeded?

Our goal is to solve the problem of childhood obesity in a generation. Achieving that goal will mean returning to the expected levels in the population, before this epidemic began. That means ***returning to a childhood obesity rate of just 5% by 2030***. Achieving this goal will require "bending the curve" fairly quickly, so that by 2015, there will be a 2.5% reduction in each of the current rates of overweight and obese children, and by 2020, a 5% reduction. Our progress can be charted through the CDC's annual National Health and Nutrition Examination Survey (NHANES), which is aggregated every two years.



Source: CDC, National Center for Health Statistics, National Health and Nutrition Examination Surveys.
Note: Obesity is defined as BMI ≥ gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts.

In addition to monitoring the overall trends in childhood obesity, two key indicators will show the progress achieved:

1. **The number of children eating a healthy diet**, measured by those who follow the most recent, science-based *Dietary Guidelines for Americans (Dietary Guidelines)*. We can monitor our progress through the U.S. Department of Agriculture's (USDA) Healthy Eating Index (HEI), which reflects the intake of 12 dietary components: total fruit (including juice); whole fruit (not juice); total vegetables; dark green and orange vegetables and legumes; total grains; whole grains; milk products; meat and beans; oils; saturated fat; sodium; and calories from solid fats and added sugars. USDA generally regards a score of at least 80 out of 100 points as reflecting a healthy diet. Currently, the average child scores a 55.9 on the HEI.[60] To achieve a score of 80 for the average child by 2030, the average child should score 65 by 2015, and 70 by 2020. Two indicators should be monitored particularly closely:
   - **Less added sugar in children's diets.** Children today consume a substantial amount of added sugars through a whole range of products. Using existing data sources, CDC's National Center for Health Statistics can determine how much added sugar children are currently consuming. Targets for reducing added sugar will then need to be established that track the overall goal of driving obesity rates down to 5% by 2030.
   - **More fruits and vegetables.** Currently, children and adolescents consume far lower quantities of fruits and vegetables than recommended in the *Dietary Guidelines*. On average, children consumed only 64% of the recommended level of fruit and 46% of the recommended level of vegetables in 2003-04. Average fruit consumption should increase to 75% of the recommended level by 2015, 85% by 2020, and 100% by 2030; vegetable consumption should increase to 60% of recommended levels by 2015, 75% by 2020, and 100% by 2030.
2. **The number of children meeting current physical activity guidelines.** Right now, the only regular survey that shows whether children are meeting the Physical Activity Guidelines is limited to high school students, and regular data on younger children is not available. Resources will have to be redirected to develop a survey instrument that can provide a full picture of physical activity levels among children of all ages. Once baseline data is available, targets for improving the level of physical activity among children will need to be established that track the overall goal of driving obesity rates down to 5% by 2030.

Additional benchmarks of success, tied to specific recommendations in this report, are included throughout. The Healthy People goals set every decade by experts convened by the U.S. Department of Health and Human Services will provide additional, complementary opportunities to measure our progress in helping children achieve and maintain a healthy weight.

Monitoring our progress and the impact of our interventions, so that we know what is working and what strategies or tactics need to be adjusted, will be critically important. This is not an easy challenge, but it is one that we can solve as a society, and within a generation.

I. Early Childhood

Studies show that approximately one in five children are overweight or obese by the time they reach their 6th birthday,[61] and over half of obese children become overweight at or before age two.[62] Even babies are affected. Between 1980 and 2001, the prevalence of overweight infants under six months almost doubled, from 3.4% to 5.9%.[63] More can and must be done to ensure our youngest children begin life on a healthy path.

This chapter provides recommendations for reducing the risk of obesity in the early years of a child's life by:

- strengthening prenatal care;
- promoting breastfeeding;
- evaluating the impact of chemical influences in the environment;
- reducing "screen time;" and
- improving the quality of our nation's child care settings so they can consistently support our children's healthy development.

A. Prenatal Care

Mothers' pre-conception weight and weight gain during pregnancy are two of the most important prenatal determinants of childhood obesity. Several factors may influence the association of maternal weight and weight gain during pregnancy with long-term child health outcomes. These factors include maternal and paternal BMI, maternal smoking during pregnancy, blood sugar levels during pregnancy, fetal growth, birth weight, and infant feeding practices.[64]

Higher maternal weight is a risk factor for gestational diabetes or related conditions during pregnancy. Children born to mothers who had diabetes during pregnancy are at higher risk of being overweight and having gestational and type 2 diabetes. In a study of low-income children, there was a association between maternal BMI in the first trimester and the probability of being overweight at 2, 3, and 4 years of age.

Recent findings suggest that very low birth weight and very high birth weight are *both* associated with childhood obesity. Although the link between very high birth weight and childhood obesity is studied more, the link between low birth weight and obesity may be the result of accelerated growth immediately after birth. Babies who were "deprived of nutrition" before birth may be primed for accelerated growth after birth when exposed to a rich nutrient environment (which often consists of infant formula).[65] This rapid growth in the first few months and even perhaps the first days of postnatal life, are associated with increased risk of children being overweight.[66]

Maternal smoking during early pregnancy is associated with a 500% greater risk of obesity at age 5, and a 260% greater risk at ages 9-10.[67] The duration of smoking while pregnant and number of cigarettes smoked per day are both associated with increases in rates of childhood obesity.[68] Maternal smoking is linked to low intrauterine growth, which can be associated with accelerated postnatal growth and childhood obesity. Notably, the recently-enacted Affordable Care Act requires coverage of counseling and pharmacotherapy for cessation of tobacco use for pregnant women in Medicaid, with no cost-sharing for these services, effective October 1.[69]

To improve children's health, the Surgeon General recommends promoting effective prenatal counseling about: maternal weight gain; breastfeeding; the relationship between obesity and diabetes; and avoiding alcohol, tobacco, and drug use during pregnancy.[70] Recent clinical trials indicate that weight gain can be modified by prenatal counseling.[71] Currently, however, only about 30% of pregnant women receive appropriate counseling and guidance from a medical professional on how to achieve recommended weight goals during pregnancy.[72]

Higher maternal weight gain during pregnancy is also associated with excess maternal weight retained afte childbirth.[73] A higher BMI after childbirth can be a health risk for the mother but also sets the stage for a higher pre-pregnancy weight in future pregnancies.

A more complete picture of maternal and child weight is needed to monitor these trends and better inform policymakers and health professionals.

Recommendations

Recommendation 1.1: Pregnant women and women planning a pregnancy should be informed of the importance of conceiving at a healthy weight and having a healthy weight gain during pregnancy, based on the relevant recommendations of the Institute of Medicine. Specifically, health care providers, as well as Federal, state, and local agencies, medical societies, and organizations that serve pregnant women or those planning pregnancies should provide information concerning the importance of conceiving at a normal BMI and having a healthy weight gain during pregnancy. Those who provide primary and prenatal care to women should offer them counseling on dietary intake and physical activity that is tailored to their life circumstances. In many cases, conceiving at a normal BMI will require some weight loss.

Text4baby: Providing Health Tips to Pregnant Women and New Parents

Text4baby, an educational program of the U.S. Department of Health and Human Services and the National Healthy Mothers, Healthy Babies Coalition, is a free mobile information service that provides pregnant women and new parents with health tips to help them give their babies the best possible start in life.

Recommendation 1.2: Education and outreach efforts about prenatal care should be enhanced through creative approaches that take into account the latest in technology and communications. Partners in this effort could include companies that develop technology-based communications tools, as well as companies that market products and services to pregnant women or prospective parents.

Benchmarks of Success

A higher percentage of women conceiving at a normal BMI, and at an appropriate gestational weight gain during pregnancy, based on the Institute of Medicine's gestational weight guidelines.[74] To measure this, HHS should redirect existing resources to prioritize routine surveillance of weight gain during pregnancy and postpartum weight retention on a nationally representative sample of women and to report the results by pre-pregnancy BMI (including all classes of obesity), age, racial/ethnic group, and socioeconomic status.

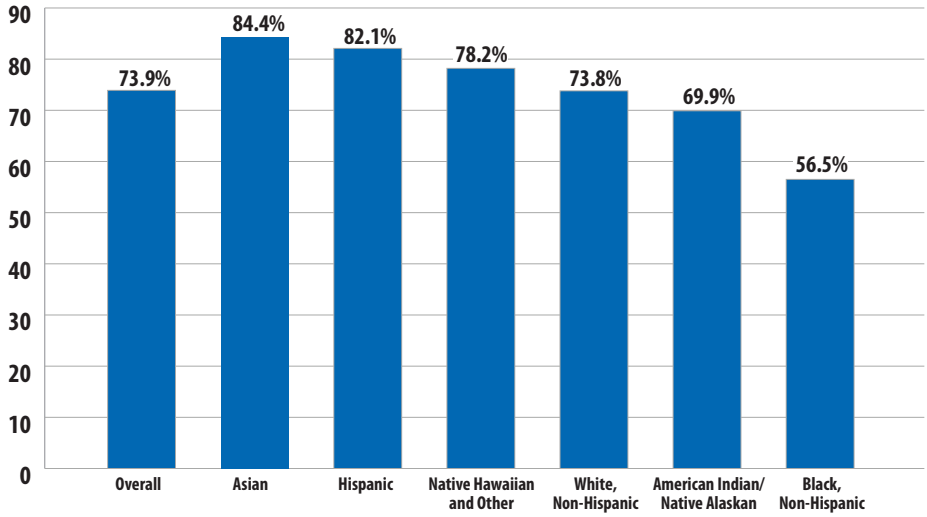
Some states also collect maternal and child weight information on birth certificates, and states should be encouraged to work with HHS to ensure that a complete set of data is collected. The 2003 version of the U.S. Standard Certificate of Live Birth includes fields for maternal pre-pregnancy weight, height, weight at delivery, and age at the last measured weight, facilitating improved public health surveillance.[75] By 2007, 24 states adopted this form, representing an estimated 60% of all births.[76] States should strive for 100% completion of fields related to maternal weight and height, as well as share data to provide a full national picture and regional snapshots. HHS should work with the remaining states to encourage adoption of the updated birth certificate form. The President's FY2011 Budget includes increased resources for all States to have an electronic birth record in 2011.

As an interim step, prenatal counseling rates can be measured as a proxy. The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project of the CDC and state health departments. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy, including information on prenatal counseling, cigarette use, alcohol use, breastfeeding, and pre-conception health (including height and weight). PRAMS will be revised to capture prenatal counseling on appropriate weight gain.

B. Breastfeeding

Children who are breastfed are at reduced risk of obesity.[77] Studies have found that the likelihood of obesity is 22% lower among children who were breastfed.[78] The strongest effects were observed among adolescents, meaning that the obesity-reducing benefits of breastfeeding extend many years into a child's life. Another study determined that the risk of becoming overweight was reduced by 4% for each month of breastfeeding.[79] This effect plateaued after nine months of breastfeeding.

Despite these health benefits, although most (74%) babies start out breastfeeding, within three months, two-thirds (67%) have already received formula or other supplements. By six months of age, only 43% are still breastfeeding at all, and less than one quarter (23%) are breastfed at least 12 months.[80] In addition, there is a disparity between the prevalence of breastfeeding among non-Hispanic black infants and those in other racial or ethnic groups. For instance, a recent CDC study showed a difference of greater than 20 percentage points in 13 states.[81]



Source: Centers for Disease Control, Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion. Breastfeeding Among U.S. Children Born 1999–2006, CDC National Immunization Survey.

The protective effect of breastfeeding likely results from a combination of factors. First, infant formula contains nearly twice as much protein per serving as breast milk. This excess protein may stimulate insulin secretion in an unhealthy way.[82] Second, the biological response to breast milk differs from that of formula. When feeding a baby, the mother's milk prompts the baby's liver to release a protein that helps regulate metabolism.[83] Feeding formula instead of breast milk increases the baby's concentrations of insulin in his or her blood, prolongs insulin response,[84] and, even into childhood, is associated with unfavorable concentrations of leptin, a hormone that inhibits appetite and controls body fatness.[85] Despite the well-known health benefits of breastfeeding and the preference of most pregnant women to breastfeed,[86] numerous barriers make breastfeeding difficult. For first-time mothers, breastfeeding can be challenging, even for those who intend to breastfeed. For those who have less clear intent to breastfeed, cultural, social, or structural challenges can prevent breastfeeding initiation or continuation. For example, immediately after birth, many babies are unnecessarily given formula and separated from their mothers, making it harder to start and practice breastfeeding. Also, hospital staff are often insufficiently trained in breastfeeding support.

The Joint Commission on the Accreditation of Hospitals, the body that accredits hospitals and health care organizations for most State Medicaid and Medicare reimbursement, now expects hospitals to track and improve their rates of exclusive breastfeeding. Hospitals that meet specific criteria for optimal breastfeeding-related maternity care are designated as "Baby Friendly" by Baby-Friendly U.S.A. This non-governmental organization has been named by the U.S. Committee for UNICEF as the designating authority for UNICEF/WHO standards in the United States. Currently only 3% of births in America occur in Baby-Friendly facilities.[87]

While breastfeeding could be far more widespread than it is today, it is not a viable alternative for all mothers and babies. Specific guidance and support options should also be made available for those who cannot breastfeed. Parents and caregivers of babies also may benefit from guidance about when to start feeding them solid foods, since early introduction of solids (prior to six months) increases the risk for childhood obesity.[88]

Workplace and Child Care Accommodations

Research has demonstrated that support is essential for helping mothers establish and continue breastfeeding as they return to work or school and make use of child care services.[89] Many women return to work soon after their baby's birth, yet 75% of employers do not offer accommodations for them to breastfeed or express milk at work.[90]

Changes are underway, however. Following the lead of states whose laws requiring employers to make accommodations, the recently-enacted Affordable Care Act requires employers to provide a reasonable break time and a place for breastfeeding mothers to express milk for one year after their child's birth.[91] Employers with fewer than 50 employees are not subject to these requirements if compliance would impose an undue hardship. The location cannot be a bathroom, and must be shielded from view and free from intrusion from co-workers and the public. The return on investment of companies that assist breastfeeding employees through appropriate support and accommodations is well-documented. Companies benefit through better employee retention, lower health care costs, and better work attendance.[92]

Support for breastfeeding in child care settings is important as well. Among women whose infants are cared for outside the home, irrespective of their intent to breastfeed, those who report better support for breastfeeding from early learning settings (such as refrigerated storage for breast milk, a commitment to feed it to the child, or privacy space for on-site breastfeeding) are more likely to breastfeed longer.[93]

Support Programs

In many communities, role models for breastfeeding are rare, and new mothers do not know where to turn for breastfeeding assistance. Volunteer networks of experienced breastfeeding mothers such as the La Leche League provide help for some mothers, but networks like this are not available in many communities. According to the CDC's annual State Breastfeeding Report Card, there were 34 breastfeeding support groups per 100,000 live births in 2009, which means about one support group for every 3000 new babies. Peer support programs, such as the Peer Counselor program delivered as part of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), provide counseling skills, training, and support to experienced breastfeeding mothers so they can effectively support new mothers. Recently, federal funds were provided to further expand the availability of peer counseling in local WIC clinics. Prenatal counseling on breastfeeding can also have positive impacts on breastfeeding rates,[94] and pre- and postnatal intervention together with peer counseling is most effective.[95]

Recommendations

Recommendation 1.3: Hospitals and health care providers should use maternity care practices that empower new mothers to breastfeed, such as the Baby-Friendly hospital standards. Hospitals and health care providers should routinely provide evidence-based maternity care that empowers parents to make informed infant feeding decisions as active participants in their care, and improves new mothers' ability to breastfeed successfully. Examples of specific practices and policies include: skin-to-skin contact between the mother and her baby; teaching mothers how to breastfeed; and early and frequent breastfeeding opportunities.

Hospitals, health care providers, and health insurers should also help ensure that new mothers receive proper information and support on breastfeeding when they are released from the hospital.

Recommendation 1.4: Health care providers and insurance companies should provide information to pregnant women and new mothers on breastfeeding, including the availability of educational classes, and connect pregnant women and new mothers to breastfeeding support programs to help them make an informed infant feeding decision.

Recommendation 1.5: Local health departments and community-based organizations, working with health care providers, insurance companies, and others should develop peer support programs that empower pregnant women and mothers to get the help and support they need from other mothers who have breastfed. Peer support networks should exist in all communities across the country, allowing all new mothers to easily identify and obtain help from trained breastfeeding peer counselors. Community organizations can foster the creation of peer support networks through expansion of programs like the WIC Breastfeeding Peer Counseling program. They can work with local breastfeeding coalitions to ensure existence of other peer support networks, such as La Leche League groups or Nursing Mothers Councils. They can also foster the creation of mother-to-mother support groups in community health centers and advertise these groups, particularly as part of the hospital discharge process.

Early Head Start (EHS) programs that enroll pregnant women, including pregnant teenagers, can also support community breastfeeding networks. EHS can provide home visits and reach out to pregnant and breastfeeding mothers to encourage and support breastfeeding, including by providing professional and peer opportunities to disseminate information and provide on-going support. Funding for evidence-based home visitation programs in the recently-enacted Affordable Care Act[96] will complement this program.

Private companies, including those that market baby products, can also help support and promote these types of community supports for mothers.

Recommendation 1.6: Early childhood settings should support breastfeeding. Child care centers and providers, health care providers, and government agencies should provide accurate information about the storage and handling of breast milk. They should also make sure child care employees and providers know how to store, handle, and feed breast milk, and understand the importance of breastfeeding.

Benchmarks of Success

An increase in breastfeeding rates. Several government sources provide statistics on breastfeeding rates. The most comprehensive source of information is the National Immunization Survey, which provides annual national, state, and selected urban-area estimates of breastfeeding initiation, duration, and exclusivity. In addition to questions on breastfeeding, the survey asks about the introduction of infant formula and other supplementary foods. As noted above, according to the survey, currently 30% of babies age nine months or younger are breastfed. This should increase by 5% every two years, so that by 2015, half of babies are breastfed for at least nine months.

C. Chemical Exposures

In addition to fetal "over-nutrition" or "under-nutrition," it is possible that developmental exposure to endocrine disrupting chemicals (EDCs) or other chemicals plays a role in the development of diabetes and childhood obesity. Some scientists have coined the term "obesogens" for chemicals that they believe may promote weight gain and obesity. Such chemicals may promote obesity by increasing the number of fat cells, changing the amount of calories burned at rest, altering energy balance, and altering the body's mechanisms for appetite and satiety. Fetal and infant exposure to such chemicals may result in more weight gain per food consumed and also possibly less weight loss per amount of energy expended. The health effects of these chemicals during fetal and infant development may persist throughout life, long after the exposures occur.[97]

Research on such chemicals suggests that the origins of obesity may lie not only in well-established risk factors such as diet and exercise, but also in the interplay between genes and the fetal and early postnatal environment. The National Institute of Environmental Health Sciences, the Environmental Protection Agency (EPA), and other research organizations have been working to understand the developmental origins of obesity and other diseases. Their activities have helped reveal the links between environmental chemicals and obesity and diabetes, providing a sufficient base of evidence to warrant future research efforts in this area.

This issue could also be investigated further by the President's Task Force on Environmental Health Risks and Safety Risks to Children, led by HHS and EPA. An increased understanding of chemical toxicity also adds strength to the existing recommendations for parents to avoid microwaving baby bottles or plastic containers that are not explicitly stated by the manufacturer as safe for use in microwaving.[98] Government should work closely with industries to translate this emerging science into programs that supports product reformulation (for example, of plastic containers) as appropriate.

Recommendations

Recommendation 1.7: Federal and State agencies conducting health research should prioritize research into the effects of possibly obesogenic chemicals. As the research becomes clearer, reducing harmful exposures may require outreach to communities and medical providers, and could also entail regulatory action.

Benchmarks of Success

A stronger knowledge of chemical exposures that may be related to obesity. Emerging research will guide the direction of future intervention strategies for which progress metrics can then be developed. The necessary research will control the timeline for at least the first 4-5 years. After that time, while research efforts will continue, there may be sufficient information to develop strategies to eliminate exposures identified as obesogenic.

D. Screen Time

The American Academy of Pediatrics (AAP) recommends that children two years old and under should not be exposed to television, and children over age two should limit daily media exposure to only 1-2 hours of quality programming.[99] In contrast to these recommendations, one study found that 43% of children under age two watch television daily, and 26% have a television in their room.[100]

Preschool aged children are also watching more television than recommended by the AAP. Ninety percent of children ages 4-6 use screen media for an average of two hours per day. Over 40% of children in this age group have a television in their bedroom, a third have a portable DVD player, and a third have a portable handheld video game player. Children from lower income families and children of color spend more time watching television and are more likely to live in a home where it is left on most of the time.[101]

Studies show an association between television viewing and risk of being overweight in preschool children, independent of socio-demographic factors. Specifically, for each additional hour of television viewing, the odds ratio of children having a BMI greater than the 85th percentile was 1.06.[102] Having a television in the bedroom had a stronger association, with an odds ratio of 1.31. One study noted that preschool children who watched television for more than two hours a day were more likely to be overweight than children who watched television two hours or less daily.[103]

Television viewing is also linked to dietary intake. Another study found that television exposure was correlated with fast-food consumption in preschool children, even after adjusting for a variety of socio-demographic and socio-environmental factors.[104]

Recommendations

Recommendation 1.8: The AAP guidelines on screen time should be made more available to parents, and young children should be encouraged to spend less time using digital media and more time being physically active. Health care provider visits and meetings with teachers and early learning providers are an opportunity to give guidance and information to parents and their children.

Recommendation 1.9: The AAP guidelines on screen time should be made more available in early childhood settings. Early childhood settings should be encouraged to adopt standards consistent with AAP recommendations not to expose children two years of age and under to television, as well as to limit media exposure for older children by treating it as a special occasion activity rather than a daily event.

E. Early Care and Education

More than 3.5 million children under age five are cared for in child care centers, and many more are cared for through less formal arrangements while a parent works.[105] Children in child care centers spent an average of 33 hours a week in those settings.[106] Parents and child care providers are sharing the responsibility for a large and growing number of children during important developmental years. Early childhood settings, including both child care centers and informal care, present a tremendous opportunity to prevent obesity by making an impact at a pivotal phase in children's lives.

Physical Activity

Young children need opportunities to be physically active through play and other activities. Physical activity assists children in obtaining and improving fine and gross motor skill development, coordination, balance and control, hand-eye coordination, strength, dexterity, and flexibility—all of which are necessary for children to reach developmental milestones.

Preschool years, in particular, are crucial for obesity prevention due to the timing of the development of fat tissue, which typically occurs from ages 3-7. During these preschool years, children's BMI typically reaches its lowest point and then increases gradually through adolescence and most of adulthood. However, if this BMI increase begins before ages 4 to 6, research has suggested that children face a greater risk of obesity in adulthood.[107]

Features of the child care center environment, including policies regarding activity and provider training, as well as the presence of portable and fixed play equipment, influence the amount of physical activity children engage in while at child care.[108]

Healthy Eating

Eating well is equally important for the healthy development of young children, and research has shown that public programs can improve the nutritional quality of the food consumed in child care settings. Children in early childhood settings who are served by USDA's Child and Adult Care Food Program (CACFP) eat healthier food than children who bring meals and snacks from home.[109] A comparison of meal quality among licensed early learning sites in California found that children eating meals provided in Head Start had the highest meal quality scores, followed by those eating in non-Head Start under CACFP. Meal quality scores were higher among center-based versus home-based facilities.[110]

Many programs have already seized the opportunity to provide healthier foods and have implemented evidence-informed initiatives that encourage healthy eating and fun, developmentally-appropriate physical activity. Still, there is room for improvement.[111] Empirically-based and practice-tested strategies for improving these settings have been identified and provide a basis for the recommendations outlined in this chapter. Through concerted and coordinated effort at the Federal, state, and local levels, today's early learning settings can support healthy weight through the development of good habits for nutrition, physical activity, and screen time.

Each state creates and enforces its own child care licensing standards, as well as other program standards for center-based and family child care homes. Not all child care facilities are required to be licensed in

order to legally operate within a state, but they must meet some basic requirements. A recent review of state child care regulations by researchers at the Duke University School of Medicine, based on ten expert-derived healthy eating model regulations, found that states had an average of 3.7 healthy eating regulations for child care centers and 2.9 for family child care homes. No state had all ten model regulations. States had particularly few regulations relating to physical activity and screen time.[112]

Workforce qualifications and training requirements for child care providers also vary widely from state to state. Many states are now implementing Professional Development Registries and other methods to better track and document the providers' training sessions. They are also implementing observation and feedback opportunities to understand if training is being applied in the classroom. To incorporate recommended nutrition, physical activity, and screen standards into their curricula, Federal agencies and states can partner with national organizations such as the National Association of Child Care Resource and Referral Agencies (NACCRRA), the National Association for the Education of Young Children (NAEYC), and the National Head Start Association (NHSA), as well as community colleges and other training providers.

Parents are often unaware of quality elements when choosing child care and early education settings, including the importance of nutrition, physical activity, and screen time limits provided in these settings, and they can find it difficult to get this information. Quality Rating and Improvement Systems (QRISs) are State systems that rate the quality of early child care settings (which can include Pre-K, Head Start, child care, and others) based on a clear, common set of criteria. These rating systems can provide parents with reliable, consistent information that can help them make informed decisions.

Innovative Early Childhood Programs

There are several evidence-informed initiatives and interventions for early childhood settings to combat childhood obesity, including:

- *I am Moving, I am Learning,* a proactive approach to childhood obesity in preschool classrooms that seeks to increase moderate to vigorous physical activity every day, improve the quality of movement activities intentionally planned and facilitated by adults, and promote healthy food choices. This approach is implemented by Head Start and has been adopted by some other child care programs as well.
- *Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC),* an assessment tool for child care settings, which uses an organizational assessment of 14 areas of nutrition and physical activity policy, practices and environments to identify the strengths and limitations of the child care facility. NAP SACC also includes goal setting and action planning, continuing education and skill building for providers.
- *Nemours Program:* Delaware, under the leadership of Nemours, an integrated child health system, launched a statewide, multi-sector program to combat childhood obesity that includes changes in child care licensing to set healthy eating and physical activity standards, along with technical assistance, training and practical toolkits to help providers implement the standards. The new standards apply to all licensed center and family day care providers, impacting 54,000 children.

Recommendations

Recommendation 1.10: The Federal government, incorporating input from health care providers and other stakeholders, should provide clear, actionable guidance to states, providers, and families on how to increase physical activity, improve nutrition, and reduce screen time in early child care settings.

Recommendation 1.11: States should be encouraged to strengthen licensing standards and Quality Rating and Improvement Systems to support good program practices regarding nutrition, physical activity, and screen time in early education and child care settings.

Both federal guidance and state policies and practices may be drawn from:

- The guidelines for Out-of-Home Child Care Programs that will be outlined in the soon-to-be released third edition of *Caring for our Children: National Health and Safety Performance Standards.*[113] These nationally recognized standards include health and safety practices such as physical activity, nutrition, and limited screen time for children from birth to age 12 in all types of early childhood settings.
- The National Association for Sport and Physical Education (NASPE) recommendation that all children in full-day child care are provided at least 60 minutes of structured and unstructured physical activity per day. Others have recommended that infants be provided opportunities for gross motor activity, and should not be unnecessarily confined.
- The revised Head Start Program Performance Standards, which include recommendations for health, nutrition, and physical environments.

Recommendation 1.12: The Federal government should look for opportunities in all early childhood programs it funds (such as the Child and Adult Care Food Program at USDA, the Child Care and Development Block Grant, Head Start, military child care, and Federal employee child care) to base policies and practices on current scientific evidence related to child nutrition and physical activity, and seek to improve access to these programs.

Benchmarks of Success

An increased number of states will adopt more stringent licensing standards that include nutrition, physical activity, and screen time that align with *Caring for our Children: National Health and Safety Performance Standards, 3rd edition* and coordinate across systems with Pre-K, Head Start, and child care. New or enhanced data sources may be needed to monitor progress in this area.

II. Empowering Parents and Caregivers

Fundamentally, parents and caregivers are responsible for their children's health and development. They instill and promote certain values, reward or reinforce specific behaviors, and shape choices that form life-long healthy habits. Each day, parents and caregivers make decisions on food selection, eating patterns, physical activity, and sedentary habits like television viewing. Children learn from the choices adults make. Often it is an entire family that experiences being overweight or obese.

Changes in the food and social environment over the past 20 years have made parents' and caregivers' roles in promoting health more challenging. Parents and caregivers want to provide good nutrition and regular physical activity, but often lack information that is clearly understandable and actionable. Communities, businesses, health care providers, and governments can play a supportive role in providing helpful information and fostering environments that support parents' and caregivers' healthy choices. For information to be useful to busy and overworked parents and caregivers, both the "what" and the "how" to deliver information must be considered. With a myriad of messages about what to eat and how to be active, the consistent delivery of specific, unambiguous, and actionable messages is critically important. In addition, the broader environment—including confusing claims or labels on food packages and marketing campaigns—can become a serious obstacle, by making unhealthy choices easy and healthy choices hard.

This chapter describes current and proposed initiatives to empower parents and caregivers by:

- making nutrition information useful,
- improving food marketing and labeling practices, and
- strengthening health care providers' role.

A. Making Nutrition Information Useful

Good nutrition plays an essential role in overall health. Healthy eating habits in childhood and adolescence are important for positive growth and development and can help children achieve and maintain a healthy weight. Today, the eating habits of many young people are inconsistent with the recommendations in the Federal *Dietary Guidelines for Americans (Dietary Guidelines),*[114] thus increasing the risk of obesity.

To assist parents and caregivers in establishing healthy eating habits for children, they should have greater access to the right tools and resources that increase nutritional knowledge and help them make healthier choices.

Dietary Guidelines for Americans and the Food Pyramid

The *Dietary Guidelines for Americans* provide science-based advice for individuals over age two to promote health and reduce the risk of major chronic diseases through diet and physical activity. HHS and USDA work in partnership to review and update these guidelines every five years, based on an analysis of scientific evidence. The current *Dietary Guidelines,* issued in 2005, encourage most Americans to eat

fewer calories, be more physically active, and make wiser food choices. The *2010 Dietary Guidelines* are under development, and will be released later this year.

The **Dietary Guidelines** provide science-based advice about good dietary habits that can promote health and reduce the risk of major chronic disease.

The *Dietary Guidelines* are intended to be the primary source of dietary health information for policymakers, nutrition educators, and health providers, helping to inform nutrition research priorities, influence industry product development, and support education initiatives. They affect the decisions both private and public institutions make, and ultimately, they are meant to inform consumers, including parents and caregivers, about how to make healthy choices.

The *Dietary Guidelines* also form the basis of Federal nutrition policy. For example, they must be applied in menu planning in the National School Lunch Program (NSLP), in education materials used by the Supplemental Nutrition Assistance Program (SNAP, formerly called food stamps), and in the development of information on the Nutrition Facts panel that appears on food packages.

The Food Pyramid is an educational system developed by USDA to translate the *Dietary Guidelines* into food-based recommendations and applications for the public. The broader MyPyramid Food Guidance System provides educational resources, messages and personalized tips about nutrition and physical activity, and extensive online interactive healthy eating tools.

MyPyramid.gov has reached millions of consumers, health professionals, and educators since it was launched in 2005, and is consistently one of the top five most popular federal web sites. Despite its popularity and prominence, the Food Pyramid has been subject to significant criticism for failing to communicate effective, actionable messages to consumers, which many observers have suggested are critical in changing behavior.[115] The MyPyramid system is currently being studied for improvements.

In addition, the recently-enacted Affordable Care Act requires HHS, in consultation with private-sector experts, to maintain a website that provides science-based information to health care providers and consumers on guidelines for areas such as nutrition, regular exercise, and obesity reduction. The legislation also requires HHS to create a web-based prevention plan tool to help families make informed health decisions.[116] Parents and caregivers can also currently find information about nutrition and healthy eating at www.FruitsandVeggiesMatter.gov and through the We Can childhood obesity prevention program developed by the National Institutes of Health (wecan.nhlbi.nih.gov). Given the broad array of federal tools to help consumers make healthy choices, it is critical that these tools be developed and maintained in a manner that is coordinated and sending consistent messages.

Food Package Labeling

Parents and children need accurate, clear, and consistent information on food packages in order to choose healthier foods. At present, the main source of consistent information is the detailed Nutrition Facts panel on food packages, designed by the Food and Drug Administration (FDA) pursuant to the Nutrition Labeling and Education Act of 1990. USDA regulates the labeling of meat and poultry products, and currently requires the Nutrition Facts to be displayed on processed products. USDA is in the process of requiring that the Nutrition Facts panel be displayed on other meat and poultry products, including

ground beef and cuts of meat, as well.[117] According to recent FDA surveys, consumers are increasingly seeking nutrition information about the food they purchase.

The percent of the U.S. population that reports "often" reading a food label the first time they buy a product increased from 44% in 2002 to 54% in 2008. Of those that read food labels when purchasing a product for the first time in 2008, the food label was most often used to:

- See how high or low a food is in things like calories, salt, vitamins or fat (two-thirds of consumers).
- Get a general idea of the nutritional content of the food (over one-half of consumers).

Use of the Nutrition Facts nearly doubled in only four years, from 32% in 2004 to 52% in 2008.[118]

Nutritional or health claims on the front of food packages have also increased, but these claims are sometimes seen as misleading. An FDA survey found that only about half or less of Americans trust the claims on the front of food packages.[119] FDA has the authority to review scientific evidence for nutrient content and health claims on food packages before they are used, and is increasingly taking action to help prevent the spread of misinformation. FDA has taken action recently to address some of the inappropriate use of claims in food labeling.[120]

Despite its value and importance, the Nutrition Facts panel has been criticized as unduly detailed and complex. To make it easier for consumers to get information at a quick glance, FDA is currently investigating options for a standard, front-of

"Spot the Block" Campaign

HHS has launched a program called "Spot the Block" to encourage children and caregivers to read the Nutrition Facts panel. They have recently launched an education campaign based on "Spot the Block" that targets African-American and Hispanic communities.

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 260 — Calories from Fat 120

	% Daily Value*
Total Fat 13g	20%
Saturated Fat 5g	25%
Trans Fat 2g	
Cholesterol 30mg	10%
Sodium 660mg	28%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	

Vitamin A 4% • Vitamin C 2%
Calcium 15% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Sample Nutritional Label

HHS tested the "Spot the Block" program with the Cartoon Network and the research findings showed the program is effective in getting children to respond to the messages. Specifically, there were significant increases in:

- children who think the Nutrition Fact panel is important to them (+21%);
- the likelihood children would tell their friends to check the Nutrition Facts panel (+48%); and
- the perceived importance of knowing the serving sizes of the food they eat (+71%).

package label. FDA is also working to update the Nutrition Facts panel based on new scientific information and consumer research.

Serving sizes also play an important role. In 2005, FDA began the process of reviewing data to update the reference amounts used to determine serving sizes on food packages. A specific concern was the presentation of serving size information on packages that may contain multiple servings but could reasonably be consumed at one time. For example, a 20 ounce bottle of soda is currently labeled as having multiple servings, but is often consumed all at once. FDA is currently analyzing comments and food intake survey data to determine steps to take and how changes in serving size will impact updates to the Nutrition Facts panel.

Menu Labeling

The recently-enacted Affordable Care Act requires display of calorie counts by chain restaurants with 20 or more locations and vending machine operators with 20 or more machines.[121] Chain restaurants must also make available for customers, upon request, more detailed nutritional information such as sodium and sugars, and the menu or menu board must also include a clear statement indicating the availability of this information. Chain restaurants must display this information on menus, menu boards, self-service lines, and in drive-through lanes. Vending machines must provide a clear and noticeable statement disclosing the calorie counts near each item or the selection button. Restaurants, retail food establishments, and vending machine owners who are not subject to these requirements can voluntarily register with HHS to be subject to these requirements. New York City implemented a similar law prior to enactment of the Affordable Care Act, and early research indicates it may have favorably affected eating habits, although firm conclusions cannot yet be drawn.[122]

A recent study showed that both information and convenience can have a beneficial effect on how customers choose their meals. The study indicates that when presented with calorie information (how many calories are contained in each menu item) and a calorie recommendation (how many calories men and women of varying activity levels should consume), people on average order meals with significantly fewer calories. Indeed, the effect of providing this information reduced meals by almost 100 calories.[123] The study also showed that making healthier meal choices more convenient has a significant impact on consumption decisions. For example, if healthier options are featured on a menu page and other options require a more active choice, it is likely that fast-food customers will order lower calorie meals. This finding is consistent with other studies showing that changes in how and where food is located can help promote healthy choices, suggesting the effectiveness of possible changes like moving vending machines farther from school cafeterias or moving fruit next to cash registers.[124]

Research has also shown that plate size in restaurants or at home can make a significant difference in how much food is consumed,[125] and that portion sizes have grown substantially over time.[126] Eating dinner as a family is also associated with healthier eating.[127]

Recommendations

Recommendation 2.1: The Federal government, working with local communities, should disseminate information about the 2010 Dietary Guidelines for Americans through simple, easily actionable messages for consumers and a next generation Food Pyramid. As HHS and USDA launch the

updated Dietary Guidelines in late 2010, they should include simple advice and messages for consumers. Incorporating information about knowing daily caloric needs will be useful as menu labeling is implemented. For example, these messages could include:

- Drink water instead of soda or juice with added sugar;
- Avoid foods that consist mainly of added sugars or fats;
- Eat more fruits, vegetables, whole grains, and lean proteins;
- Choose low-fat or fat-free dairy products (such as 1% or skim milk); and
- When possible, eat dinner together as a family.

Other important messages to share with parents include:

- The recommended amount of daily physical activity (one hour a day for children, as recommended by the companion *Physical Activity Guidelines for Americans*);
- The recommended amount of screen time; and
- The recommended amount of sleep (more than 10.5 hours a night for preschool-aged children and 12 hours for infants).[128]

Any specific messages should be coordinated with the scientific recommendations of the Dietary Guidelines Advisory Committee. They should also be coupled with practical tips for parents on how to make these changes in their children's lives. The tips should recognize the juggling act and time pressures that many parents and caregivers are facing. Suggestions for how to deliver these messages should also be sensitive to the risk of eating disorders among young people.

USDA and HHS should also research and disseminate information about the most effective ways to promote the Dietary Guidelines among children to impact their eating habits. This includes modernizing the "SNAP Ed" program, a nutrition education program for participants in SNAP (formerly known as food stamps), in a way that provides influential information to parents and caregivers. A recent study recommended that SNAP Ed be improved in a number of ways.[129]

Recommendation 2.2: The FDA and USDA's Food Safety and Inspection Service should collaborate with the food and beverage industry to develop and implement a standard system of nutrition labeling for the front of packages. The labeling system should be based on scientific research that assesses the formats people will notice, understand, and use to make healthy choices. To complement this effort, FDA should address portion size and continue its work to prevent misleading claims on food packages.

Recommendation 2.3: Restaurants and vending machine operators subject to the new requirement in the Affordable Care Act should be encouraged to begin displaying calorie counts as soon as possible.

Recommendation 2.4: Restaurants should consider their portion sizes, improve children's menus, and make healthy options the default choice whenever possible. The improvements are particularly important since one-third of meals are consumed in restaurants,[130] including many meals eaten by children at fast-food establishments.

Benchmarks of Success

An increase in the number of parents who are better able to notice, understand, and use food labels. FDA collects data on use of nutrition labels by adult consumers in households with children through the Health and Diet Survey and will be looking for a steady increase in the percentage using the labels.

In addition, as noted earlier in this report, it will be critically important to monitor the overall health of children's diets and make steady progress toward improvements such as reducing added sugars and increasing fruit and vegetable consumption.

B. Food Marketing

Food marketing to children and adolescents is a big business. The Federal Trade Commission (FTC) estimates that, in 2006, food, beverage, and quick-serve restaurant companies spent more than $1.6 billion to promote their products to young people.[131] Children and adolescents are an important demographic for marketers for several reasons: (1) they are customers themselves; (2) they influence purchases made by parents and caregivers; and (3) they are the future adult market.[132] For many years, public health experts and others have argued that the marketing of energy-dense, low-nutrient food products to children and adolescents is one of many factors contributing to the obesity epidemic. While a causal link between marketing and increasing childhood obesity rates has yet to be firmly established,[133] research indicates that advertising can have a strong influence on children. Young children in particular have difficulty distinguishing between television programming content and advertising, or comprehending the purpose of advertising.[134] Older children, and even adults, are influenced by advertising too.

The marketing of food products can also be a powerful tool to drive the purchase of healthy products and to communicate important information about healthy eating choices. For example, one study found that children ages 3-5 preferred the taste of the same foods if they thought they were from McDonald's, rather than another source.[135] Key actors—from food and beverage companies, to restaurants, food retailers, trade associations, the media, government and others—all have an important role to play in creating a food marketing environment that supports, rather than undermines, the efforts of parents and other caregivers to encourage healthy eating among children and prevent obesity.

Current Climate, Recent Initiatives, and Industry Self-Regulation

Television advertising is the dominant form of marketing to both children and adolescents, comprising almost half of total youth-directed marketing expenditures according to the FTC.[136] However, food and beverage companies utilize a full range of other marketing techniques including print, internet advertising (such as advergames), product packaging, in-school marketing, cross-promotions, prizes and contests, and the use of popular licensed characters that appeal to children and adolescents.[137] Notably, many advertising campaigns are fully integrated, using common themes across multiple promotional platforms.[138]

The use of licensed characters to market foods to children is particularly effective and pervasive. Research conducted by the Sesame Street Workshop in 2005 found a strong influence of popular

licensed characters on preschoolers' food preferences.[139] When preschoolers were asked if they would rather eat broccoli or a Hershey's chocolate bar, 78% of the children chose the chocolate bar and only 22% chose broccoli. When an Elmo sticker was placed on the broccoli, however, 50% of the children chose broccoli. Not surprisingly, food marketers' use of licensed characters in cross promotions targeting children has increased in recent years.[140] At the same time, the nutritional quality of the products promoted by these characters has decreased.[141]

In 2006, a Joint Task Force on Media and Childhood Obesity was established to examine the impact of media on childhood obesity and to develop voluntary industry standards to limit advertising that targets children. Senators Sam Brownback and Tom Harkin, former Federal Communications Commission (FCC) Chairman Kevin Martin, and former FCC Commissioner Deborah Taylor Tate convened the Task Force and members spanned from industry to government, and many others. The Task Force was unable to agree on either a uniform set of nutritional standards for defining healthy versus unhealthy foods, or media companies' obligations to enforce advertising limits.

That same year, the Council of Better Business Bureaus established the Children's Food and Beverage Advertising Initiative (CFBAI) in response to growing public concern and calls for the food and beverage industry to self-regulate. CFBAI was intended to change the ratio of food and beverage advertising messages directed to children under the age of 12 to encourage healthier eating and lifestyles.[142] Its 16 current member companies (Burger King, Cadbury Adams, Campbell Soup, Coca-Cola, ConAgra Foods, Dannon, General Mills, Hershey, Kellogg, Kraft, Mars, McDonald's, Nestle, PepsiCo, Post Foods, and Unilever) have agreed upon five central components:

1. 100% of child-directed television, print, radio, and internet advertising must promote "healthier dietary choices" or "better-for-you" products;[143]
2. Products depicted in child-directed interactive games must be "better-for-you" foods or the games must incorporate healthy lifestyle messages;
3. Companies must reduce their use of third-party licensed characters in advertising that does not promote healthy dietary choices or healthy lifestyles;
4. Companies must not pay for or actively seek placement of their products in entertainment directed at children; and
5. Companies must not advertise food or beverage products in elementary schools.

Since its implementation, the efficacy of the CFBAI's efforts has been subject to debate. FTC's 2008 report noted that the participating companies' nutritional standards, as well as their definitions of "child-directed," vary by company.[144] Within certain guidelines, each company developed its own nutritional standards for what constitutes a "better for you" food or a "healthy dietary choice." Moreover, the FTC criticized the program for applying these standards only to certain forms of advertising. It recommended, among other things, that the CFBAI improve the quality and consistency of the nutritional standards and extend those standards to all advertising and promotional techniques, including product packaging and "point-of-sale" advertising (such as displays near a check-out counter).[145]

A recent study analyzed the effectiveness of the CFBAI and found that it had not substantially shifted advertising for children toward healthier products.[146] Using one measure of nutritional quality, the study determined that, in 2009, advertisements for healthy products accounted for a very small fraction of all advertising by participating companies, while most advertising promoted foods of low nutritional value.[147] The study also found that companies participating in the CFBAI nearly doubled the use of licensed characters over the past four years, increasing from use in 8.8% of advertisements in 2005 to 15.2% in 2009. Roughly half of all advertisements with these characters are for foods in the lowest nutritional category.[148] The CFBAI has criticized this study, and argues that its voluntary efforts have led to significant improvements in foods advertised to children.[149]

Some media and entertainment companies have adopted policies limiting the types of foods for which they will license their popular characters.[150] In addition, one company has set nutritional standards for the food advertising it accepts on child-directed programming.[151] However, not all companies with popular entertainment properties have instituted similar policies, and the ones that have often use varying guidelines.

Concern about the ineffectiveness of industry self-regulation led Congress in 2009 to direct the formation of an Interagency Working Group on Food Marketed to Children (IWG).[152] This group, comprised of representatives of the FTC, FDA, CDC, and USDA, was tasked with developing recommendations for uniform standards for foods marketed to children ages 17 and under, as well as the scope of media to which such standards should apply. The group released tentative voluntary standards in December 2009 and is expected to publish proposed standards in the Federal Register for public comment in the near future.

An examination of the food and beverage industry's efforts to voluntarily limit marketing to children suggests the following conditions are necessary for meaningful improvement to occur through industry-directed initiatives:

1. First, self-regulatory groups must adopt a uniform set of nutritional standards. Without clear, consistent standards, there can be no objective basis for comparing different food products or measuring progress. The freedom of the CFBAI members to define what constitutes a "better-for-you" food product has resulted in variations in the nutritional criteria used from one company to the next.[153] The IWG's forthcoming recommendations on standards should be helpful here. More generally, Federal agencies with expertise in this area should work with industry to establish consistent standards based on the *Dietary Guidelines* that can be easily understood by both consumers and industry.

2. Second, any framework for voluntary reform must provide a level competitive playing field within the industry. If compliance results in significant competitive disadvantages to participating companies, long-term compliance becomes unsustainable. It is therefore critical to have broad participation by all companies that market food and beverage products to children. These efforts must be supported by cooperation from the major media companies that target child audiences. Media companies can directly control the type and volume of advertisements shown on their platforms. Accordingly, they can impose limits on advertising, regardless of

advertisers' participation in a voluntary scheme. Media companies' use of uniform nutritional criteria would facilitate these efforts.

3. Third, to create a meaningful impact, self-regulation must apply to all forms of marketing across multiple platforms. The current voluntary guidelines allow extensive marketing of non-nutritious foods in a myriad of ways that target children.

4. Finally, effective voluntary reform will only occur if companies are presented with sufficient reasons to comply. The prospect of regulation or legislation has often served as a catalyst for driving meaningful reform in other industries and may do so in the context of food marketing as well.

The Role of Federal Regulation of Advertising

The Federal Communications Commission (FCC)'s regulatory authority varies across industries and platforms. The FCC has some direct authority to regulate advertising on children's television programs. The Children's Television Act limits the amount of commercial matter aired during children's programming to no more than 10.5 minutes per hour on weekends and no more than 12 minutes per hour on weekdays. As implemented by the FCC, these limits apply to commercial television licensees, cable operators, and satellite television (DBS) providers. In addition, the Act specifically authorizes the FCC to review and evaluate the advertising duration limitations, and to modify them in accordance with the public interest based on demonstrated need.[154]

The FTC, which has extensively studied food marketing to children,[155] is responsible for protecting consumers by preventing unfair or deceptive advertising. However, its ability to regulate child-directed advertising is limited. In 1981, in response to the FTC's effort to regulate the advertising of sugary foods to children, Congress prohibited the agency from using its authority over unfair practices to adopt rules regarding children's food advertising.

While new or revised rules to limit advertising during children's programming may be helpful or even necessary to fully address the childhood obesity epidemic, such efforts must carefully consider freedom of speech interests. Furthermore, even if efforts to limit marketing to children are successful, they would only provide a partial solution given that children are heavily exposed to advertising not specifically directed to them. For example, half of the food advertisements children see on television occur on prime-time and other non-child directed programs.[156] Programs like *American Idol* and *The Simpsons*, which are popular among children and teens, are regarded as general audience or family programming because adults form such a large share of the audience.[157] In addition, children are increasingly exposed to many forms of marketing other than television advertising, including billboards, point-of-purchase displays, and content accessed through the Internet, mobile phones, and MP3 players.

Recommendations

The Federal government can play a crucial role in improving the media environment for children with respect to the marketing of foods and beverages. It can do so while fully respecting the First Amendment right to free speech. Generally, this role includes:

- Bringing together key stakeholders to develop collaborative solutions;
- Providing guidance to industry on voluntary initiatives;
- Conducting consumer education and outreach campaigns; and
- Promulgating laws and regulations when other methods prove insufficient.

Recommendation 2.5: The food and beverage industry should extend its self-regulatory program to cover all forms of marketing to children, and food retailers should avoid in-store marketing that promotes unhealthy products to children. Currently, the CFBAI guidelines limit only certain types of child-directed advertising—including television, print, radio, and Internet—but do not apply to in-store advertising, product packaging, and many other forms of marketing. For truly meaningful and effective self-regulation, all forms of child-directed marketing should be covered. Retailers have an important role to play in this effort as well, since they control what products are placed at children's eye level and can impact in-store advertising, including at the point-of-sale.

Recommendation 2.6: All media and entertainment companies should limit the licensing of their popular characters to food and beverage products that are healthy and consistent with science-based nutrition standards.

Recommendation 2.7: The food and beverage industry and the media and entertainment industry should jointly adopt meaningful, uniform nutrition standards for marketing food and beverages to children, as well as a uniform standard for what constitutes marketing to children. All nutrition standards should be based on the Dietary Guidelines. As part of this effort, the food and beverage industry should develop aggressive targets and metrics for increasing the proportion of advertisements for healthy foods and beverages across all marketing channels and platforms. The media and entertainment industry should develop uniform guidelines to ensure that a higher proportion of advertisements shown on their networks and platforms are for healthy foods and beverages.

Recommendation 2.8: Industry should provide technology to help consumers distinguish between advertisements for healthy and unhealthy foods and to limit their children's exposure to unhealthy food advertisements. The food and beverage industry and the media and entertainment industry should create an on-air labeling system that helps consumers easily distinguish between advertising for healthy and unhealthy foods. The FCC could also urge these industries to create innovative technologies that allow parents to block unhealthy food and beverage advertising from all programming. The nutritional standards should be uniform and based on the Dietary Guidelines.

Recommendation 2.9: If voluntary efforts to limit the marketing of less healthy foods and beverages to children do not yield substantial results, the FCC could consider revisiting and modernizing rules on commercial time during children's programming.

Benchmarks of Success

A substantial yearly increase in the proportion of healthy food and beverage advertisements targeting children such that, within three years, the majority of food and beverage advertisements directed to children promote healthy foods.

A substantial yearly decrease in the use of licensed characters to promote foods and beverages that are not healthy such that, within three years, licensed characters are used only to promote healthy foods and beverages.

To measure progress, data-driven studies are needed to evaluate the nutritional content of foods advertised to children. The FTC's follow up study, expected in 2011, will explore this issue, as well as shifts in consumption that have occurred following the implementation of industry self-regulation. It is critical to monitor and evaluate progress to support marketing efforts that reduce childhood obesity. If industries and government begin implementing recommendations immediately, meaningful progress could be achieved in three years.

C. Health Care Services

BMI Measurement and Obesity Prevention

Parents and caregivers often do not realize when a child is overweight or obese. In fact, studies have consistently shown that parents do not accurately perceive the weight of their overweight or obese child.[158] To inform and make potentially serious health issues salient to parents and caregivers, several states and municipalities now require children's BMI to be measured and shared with parents or caregivers. When aggregated, this data can also show the weight status over time in a student population, monitor progress of national health objectives,[159] and monitor the effects of school-based physical activity and nutrition policies and programs.

BMI is a measure of weight status at one point in time, so it is important for students, families, and policymakers to respond to trends in BMI measurements rather than one measurement point. For children and teenagers, BMI is used as a screening tool, not a diagnostic tool, meaning that it can suggest a child has a weight concern but does not determine a child's weight status.[160] To understand a BMI score more accurately, health care providers often look at other measures. Additional assessments and tests can include a patient's medical history, family history, diet, physical activity habits, and blood pressure, and laboratory tests such as cholesterol levels. By performing follow up assessments and tests, practitioners can determine if the student actually has excess body fat or other health risks related to obesity.

A recent survey of practicing pediatricians found that nearly all respondents reported measuring height and weight at well-child visits, using growth charts as a reference. However, only about half calculate and assess BMI percentile for gender and age for children older than two years of age.[161] Most pediatricians reported that they lacked time to counsel on overweight or obesity and counseling alone has poor results, yet they noted that having simple diet and exercise recommendations would be helpful. In another survey, only about 37% of overweight children and adolescents reported being told by a health care provider they were overweight.[162]

Some states are implementing school-based BMI measurement programs. These screening programs are designed to assess the weight status of individual students to detect those who are at risk for weight-related health problems. Screening results are sent to parents and typically include: the child's BMI-for-age percentile; an explanation of the results; recommended follow up actions, if any; and tips on healthy eating, physical activity, and healthy weight management. To date, few studies have assessed the utility of these programs in preventing increases in obesity or their impact on weight-related knowledge, attitudes, and the behaviors of young people and their families.[163] These approaches merit further evaluation and review.

It is critical that health providers engage in BMI measurement. As the Surgeon General has noted, "people access the health care system through multiple channels, and medical care settings are an important avenue for preventing and controlling overweight and obesity. Clinicians are often the most trusted source of health information and can be powerful role models for healthy lifestyle habits."[164] While uninsured families have decreased access to well-child care and thus BMI screening, the recently-enacted Affordable Care Act will expand health care coverage and provide additional opportunities to support children's health.

Parents and families should also receive specific information and counseling on healthy behaviors from their health care providers. These behaviors include increasing fruit and vegetable intake and physical activity time, limiting unhealthy behaviors such as consumption of high calorie foods with little nutritional value and sugar sweetened beverage intake, and reducing sedentary time. Providers should also be able to refer parents and caregivers to the appropriate community resources.

An expert committee, convened by the American Medical Association (AMA), HHS's Health Resources and Services Administration (HRSA), and the CDC, made recommendations, which have been endorsed by the American Academy of Pediatrics (AAP), on the prevention, assessment, and treatment of children who are overweight or obese.[165] The committee noted that health care provider offices and health care systems may need to change their organizational approach to effectively address obesity prevention. More comprehensive and more useful care can be provided by integrating community resources, health care, and patient and family self-management. Health care providers may also need training on how to raise these issues most effectively with parents, since the stigma often associated with obesity can sometimes prevent clinicians from feeling comfortable discussing the implications of a high BMI.[166] Similarly, it is important to avoid children feeling stigmatized due to their weight.[167]

Obesity Treatment

The AAP-endorsed recommendations of the expert committee described above include four stages of treating obesity. The first stage is brief counseling, which can be delivered in a health care office. Subsequent stages require more time and resources. Stage two is a structured plan, consisting of a balanced diet, supervised physical activity, reduced screen time, and logs to monitor behavior change. Stages three and four include intensive interventions administered by expert obesity management professionals.[168]

The chronic care model also creates a new structure for treatment of chronic diseases by integrating community resources with health care and patient self-management. This approach is recommended for children who are overweight or obese.[169] The United States Preventive Services Task Force (USPSTF) found that effective, comprehensive weight-management programs for obese children ages 6 years and older incorporated counseling and other interventions that targeted diet and physical activity. Interventions also included behavioral management techniques to assist behavior change, and those that focused on younger children incorporated parental involvement.[170]

Recommendations

Recommendation 2.10: Pediatricians should be encouraged to routinely calculate children's BMI and provide information to parents about how to help their children achieve a healthy weight. As part of the First Lady's Let's Move Initiative, the AAP pledged in February 2010 to engage in a range of efforts to achieve two primary goals:

- Calculate BMI for every child at every well-child visit beginning at age 2, and provide information to parents about how to help their child achieve a healthy weight.
- Provide "prescriptions" for healthy active living, including good nutrition and physical activity, at every well-child visit, along with information for families about the impact of healthy eating habits and regular physical activity on overall health. Pediatricians can use their own prescription pads or existing handouts, or they can opt to use the healthy active living prescriptions created by the AAP and available at www.aap.org/obesity/whitehouse.

Recommendation 2.11: Federally-funded and private insurance plans should cover services necessary to prevent, assess, and provide care to overweight and obese children. HHS's Center for Medicare and Medicaid Services is planning to send a letter to State Medicaid directors to clarify how these services are currently covered in Medicaid and the Children's Health Insurance Program. The recently-enacted Affordable Care Act also requires each State to design a public awareness campaign on preventive and obesity-related services available to Medicaid enrollees.[171] Starting this year, the Act also requires new private plans to cover preventive services at no charge by exempting these benefits from deductibles and other cost-sharing requirements.[172] The Indian Health Service covers these services and has proposed an initiative on early identification and treatment of childhood and adult obesity in primary care in the President's FY2011 Budget.

Recommendation 2.12: Dentists and other oral health care providers should be encouraged to promote healthy habits and counsel families on childhood obesity prevention as part of routine preventive dental care.

Recommendation 2.13: Medical and other health professional schools, health professional associations, and health care systems should ensure that health care providers have the necessary training and education to effectively prevent, diagnose, and treat obese and overweight children.

Benchmarks of Success

All primary care physicians should be assessing BMI at all well-child and adolescent visits by 2012.

All parents and caregivers should routinely receive nutrition and physical activity counseling from their children's health care providers by 2012.

BMI assessment and counseling trends can be tracked using the National Ambulatory Medical Care Survey. Additionally, in 2009 the National Committee on Quality Assurance (NCQA) added rates of BMI assessment and nutrition and physical activity counseling for children and adolescents to its "HEDIS" (Healthcare Effectiveness Data and Information Set) quality measures. The NCQA HEDIS measures provide a complementary tool for future tracking of provider assessment and counseling trends.

Key Questions for Future Research

Building the science for prevention will help to strengthen childhood obesity prevention efforts. Below are identified research areas for consideration when developing national research agendas:

- Research the link between traditional as well as non-television forms of advertising, such as the internet, and food preferences and consumption by children and adolescents.
- Test studies of family-based interventions (such as studies of parenting style, home availability of healthful food, and opportunities for physical activity).
- Identify and test approaches for community partnerships to disseminate and implement evidence-based obesity prevention programs.
- Understand how individuals interpret and are influenced by dietary and physical activity messages (such as interpersonal, cultural, and media messages, as well as food labels) through research on learning, cognition, information processing, persuasive communications, and message framing.
- Determine whether federal farm promotion ("check-off") programs that promote certain agricultural products have an impact on Americans' compliance with the *Dietary Guidelines.*
- Compare medical and surgical treatments and lifestyle changes to identify those that are most effective in improving obesity and health outcomes in children and adolescents.
- Test models for delivering obesity prevention and treatment to change the behaviors of health practitioners and translate or disseminate evidenced-based therapies to primary care practices.
- Examine effects of targeted strategies focused on subpopulations at elevated obesity risk, such as those in racial and ethnic minority populations, tribal populations, lower socioeconomic status, rural communities, people with disabilities, and individuals taking medications that can increase body weight (such as psychotropics or insulin).
- Examine the efficacy of increased habitual sleep time on metabolic regulation such as reducing body weight, regulating appetite, and improving glucose tolerance and insulin sensitivity.

III. Healthy Food in Schools

The school environment strongly impacts the behavior, and thus the health and well-being of the students. Over 55 million American children are enrolled in elementary or secondary school.[173] These children spend over six hours each day at school, on average.[174] Over 90% of enrollees attend schools that offer one or more Federal nutrition assistance programs.[175] In addition, many students consume foods sold at school, but outside the school meal programs. Most children eat at least one meal at school, either brought from home or provided by the school. Many will have more than one meal, along with snacks and other supplementary foods.

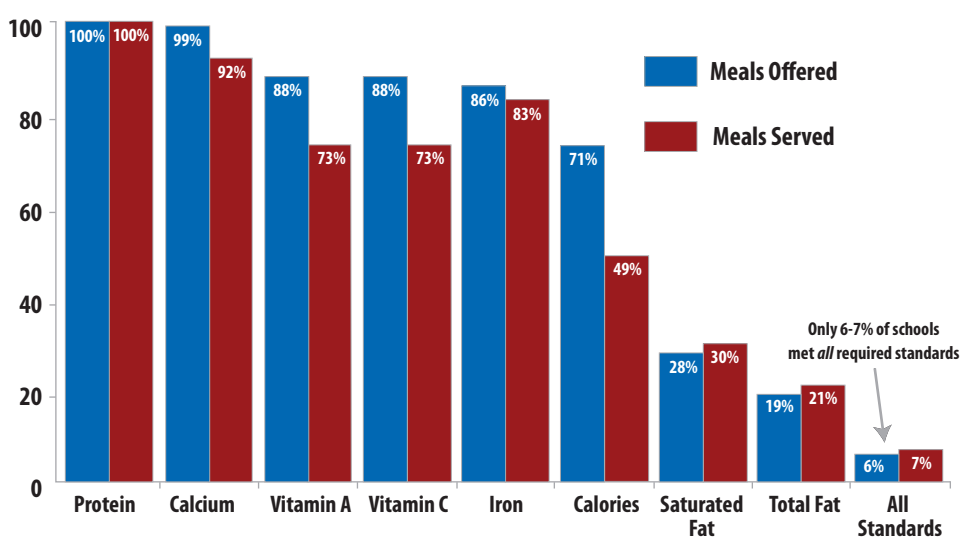
Beyond this, various educational and related activities, both at school and traveling to and from school, have an important impact on students' nutrition and physical activity behaviors. Children's choices depend on what is most visible and easily accessible; seemingly small differences in the school environment can have large effects on what children eat. The "choice architecture" intentionally or unintentionally designed into the school nutrition environment can make a decisive difference in our children's behaviors and health.

Unfortunately, some key aspects of current school meals, other foods at school, and environmental factors are contributing to obesity and failing to support good nutrition and physical activity behaviors. This chapter outlines a range of actions that families, communities, businesses, and governments at all levels can take to improve school foods and the school nutrition environment so they support and foster healthier food choices and help reduce childhood obesity. It focuses on four major areas:

- improvements in the quality of school meals;
- changes in other foods available at school to ensure that all food sold at school support healthful diets;
- modifications to curriculum, school program operations, and community policies and infrastructure to match changes in school foods; and
- revisions to policies and practices in juvenile justice and other institutional settings to ensure that all childhood and youth environments support healthy eating.

A. Quality School Meals

Meals provided under the federally-financed National School Lunch Program and School Breakfast Program must meet a range of food-based and nutrient-based standards to ensure they contribute effectively to a good diet. The most recent national study of the content of such meals, however, found that they were not always meeting program standards.



Source: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, School Nutrition Dietary Assessment Study-III, Vol. I: School Foodservice, School Food Environment, and Meals Offered and Served, by Anne Gordon, et al. Project Officer: Patricia McKinney. Alexandria, VA: 2007

- In the 2004-05 school year, although most school meals were consistent with meal pattern requirements and provided most key nutrients, 93-94% of meals failed to meet all nutritional standards, primarily due to not meeting standards for fat, saturated fat, or calories.[176]
- Most schools offered students the opportunity to select a balanced meal, but few students made the healthful choice. In about 90% of all schools nationwide, a student had opportunities to select low-fat lunch options, but in only about 20% of all schools did the average lunch actually selected by students meet the standards for fat.[177]
- Schools offered few whole grain foods in the school year 2004-05, and french fries and other similar potato products accounted for a disproportionate amount of the vegetable options on school lunch menus.
- Since the last time the Nutritional Standards and Meal Requirements for schools were set, the *Dietary Guidelines* have been updated. The Institute of Medicine recently provided recommendations for updated nutrition standards consistent with the 2005 *Dietary Guidelines*.[178] Those recommendations include increasing the amounts of fruits, vegetables and whole grains; reducing the amount of sodium and saturated fat provided; and setting a minimum and maximum number of calories for school meals. This must be done in a manner that is appealing and appetizing to children and in conjunction with effective nutrition education that helps students select and consume these foods. USDA is currently developing a regulatory proposal to guide schools in implementing updated standards.

Engaging the Community to Improve School Food: Aptos Middle School, San Francisco, CA

Beginning in the 2003-04 school year, the San Francisco Unified School District began implementing new school policies that set nutritional requirements for all foods sold in school. The changes were developed through the involvement of parents, community leaders, public health practitioners, and local physicians, spearheaded by a local organization, Parents for Public Schools in San Francisco, to implement changes in school food.

At the same time, parents at San Francisco's Aptos Middle School launched an effort specific to their school to change and improve the items sold on the snack bar menu. Student input on menu choices was an important guide to the menu changes. The success of the changes at Aptos in the 2002–03 school year helped establish the basis for the city-wide standards the following year.

The results include:

- Increased student satisfaction with school meals and increased participation in school meals programs.
- Increased service of fruits and vegetables.
- Better nutritional content of a la carte foods and increased revenue.

Source: Wojcicki, J.M., Heyman, M.B. (2006). Healthier Choices and Increased Participation in a Middle School Lunch Program: Effects of Nutrition Policy Changes in San Francisco. *American Journal of Public Health, 96*(9), 1542-1547.

Recommendations

The meals served through the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) are the main nutrition intervention in elementary and secondary schools, and are a substantial part of the diets of many school children. For schools to contribute effectively to reshaping eating behaviors, the meals offered at schools must model healthful choices and help improve healthful dietary intakes.

Because school meals programs operate as partnerships between local schools, communities, state educational agencies, and the Federal government, a multi-faceted strategy is needed to promote positive change. Key actions can help advance this goal.

Recommendation 3.1: Update Federal nutritional standards for school meals and improve the nutritional quality of USDA commodities provided to schools. USDA should issue revised meal pattern requirements for the National School Lunch and School Breakfast Programs based on the Institute of Medicine's recommendations for standards that conform to the 2005 Dietary Guidelines for Americans. While most of the foods used to prepare program meals are purchased by schools, foods that USDA distributes to schools are an important component of school meals. In recent years, USDA has made great improvements in the nutritional profile of foods that it gives to schools through its commodity support programs by reducing fat, sodium, and added sugars in many of its offerings. USDA should continue to seek and implement more improvements from commodity suppliers and reprocessors, and ensure that ordering and distribution systems favor school foods that meet the updated standards.

The **HealthierUS Schools Challenge** establishes rigorous criteria for schools' food quality, participation in meal programs, physical activity, physical education, and nutrition education–the key components that make for healthy and active kids–and provides recognition for schools that meet these criteria.

Schools can participate in this model program by going to http://www.fns.usda.gov/tn/healthierus/index.html and learning about the range of educational and technical assistance materials that promote key aspects of the Dietary Guidelines, including a Menu Planner for Healthy School Meals, which provides tips on serving more whole grains, fruits, and vegetables, and lower amounts of sugar, sodium, and saturated and trans-fats in school menus.

Food service workers in more than 75% of America's schools—along with principals, superintendents, and school board members across America—have committed to work together to reach *Let's Move!* Challenge goals.

Recommendation 3.2: Increase resources for school meals. Improving meals requires an investment in better foods, as well as modernized preparation and service equipment. Costs for meal programs are shared by Federal, Tribal and state governments and families of participating children, and they each have a role in supporting meal improvements.

- The Federal government should increase program reimbursements to support the provision of healthier foods.
- States and local communities should ensure that only costs that support preparation and service of school meals are charged to food service accounts, and seek opportunities to focus additional resources on meal improvements as budgets permit.
- Local communities should review their school meal pricing policies to ensure that revenue for meals only partially subsidized by USDA (i.e. "paid meals") keeps pace with free meals, in order to support full and prompt implementation of updated meals.
- School food service companies and other suppliers should constantly seek ways to improve the nutritional quality of the food they provide without increasing prices.

Recommendation 3.3: USDA should continue its outreach and technical assistance to help provide training for school food service professionals. To provide top-quality meals that are both healthy and appealing to students, local food service professionals need the tools, skills, and techniques to prepare and serve those meals. USDA should continue its program to build skills through guidance and technical assistance, and develop updated resources to support new standards. School districts should be encouraged to make meal improvements, as well as the food preparation training and knowledge a priority for their local food service team. Tribal, state and local policymakers can support these changes with accreditation requirements for food service professionals, and training funds to meet and sustain

the requirements. Private sector partners, from philanthropy to chefs, can help support and provide this training.

Recommendation 3.4: Schools should consider upgrading their cafeteria equipment to support the provision of healthier foods, for example, by swapping out deep fryers for salad bars. Federal resources that were recently made available for this purpose were heavily over-subscribed, indicating a strong level of local interest in making these kinds of changes. To supplement public resources, private companies that manufacture this equipment, companies that benefit from the sales of healthier products, and philanthropic partners should explore ways to make these items more affordable for schools.

Recommendation 3.5: USDA should work with all stakeholders to develop innovative ways to encourage students to make healthier choices. Putting better meals on the lunch line is not enough. The prominence, visibility, and easy accessibility of particular foods greatly matter and will inevitably have an effect on choice.[179] Where possible, healthy foods should be offered and presented in ways that encourage students to choose and consume them. This can improve students' food selection and consumption. For example, schools can automatically provide vegetables with an entrée unless the student switches to a less nutritious side dish. USDA should support the development and demonstration of innovative strategies and schools should use them to make healthy meal choices easy and compelling for students.

Recommendation 3.6: USDA should work to connect school meals programs to local growers, and use farm-to-school programs, where possible, to incorporate more fresh, appealing food in school meals. Schools should be encouraged to seek opportunities to purchase foods from local farm cooperatives. USDA should work through its "Know Your Farmer, Know Your Food" initiative and Farm to School Tactical Team to identify and eliminate regulatory barriers to local procurement, assist schools in accessing local markets, and enable food producers to effectively serve their local schools. USDA, the Bureau of Indian Affairs and the Bureau of Indian Education at the Department of the Interior, should also collaborate to increase local, traditionally appropriate foods in Tribally-controlled school meal programs, such as bison and salmon.

Listening to Student Customers: "No Thank You Bites" at Baltimore Public Schools

Chef Tony Geraci, Baltimore City Food Service Director, has undertaken a wide variety of strategies to engage students in making healthier choices in his low-income district. One of the most innovative is "No Thank You Bites," in which schools make available to students two-ounce samples of a new entrée, fruit or vegetable item. Students that try a sample are given star stickers. Each month, students with stars are invited to a "Constellation Party," at which Geraci and other district food service professionals are able to talk to the students about their preferences among the samples, and meal offerings more generally. Samples that are popular become part of the menu, and all of the input is used to shape future options.

As Geraci explained in Congressional testimony last fall, "We're treating kids like the savvy consumers they are…. If a student likes what she tries, great. If not, she simply says, 'No thank you.' But everyone who works with us to expand their palates and their minds is rewarded and we listen to their suggestions."

Recommendation 3.7: Schools should be encouraged to make improvements in their school meal programs through the HealthierUS Schools Challenge in advance of updated Federal standards. While Federal school meal standards are being updated, schools should be encouraged to start immediately to improve their food offerings by committing to meeting the Challenge. Many already have, with over 650 schools certified to date. Challenge schools meet a range of high standards for the quality of school meals and all food sold in school, as well as a number of other important criteria. As part of the First Lady's Let's Move campaign, the Administration is actively promoting and encouraging schools to meet the Challenge criteria. Food service workers in more than 75% of America's schools—along with principals, superintendents, and school board members across America—have already committed to work together on this effort.[180]

Benchmarks of Success

Achieving the *HealthierUS* School Challenge goals. Double the number of schools that meet the Challenge criteria by June 2011, and add another thousand schools in each of the following two years.

All elementary and secondary schools offering meal options that meet standards for total fat and saturated fat by 2015. This can be measured by the USDA-commissioned School Nutrition Dietary Assessment Study. Assuming funds continue to be made available for this survey on a regular five year schedule, data on school year 2014-15 would be published in early 2017.

B. Other Foods in Schools

Foods offered in addition to and in competition with the meal program often do not contribute to a good diet. Such foods can be sold in the cafeteria, snack bars, vending machines, or other venues. Unlike foods served as part of the school meals programs, these foods are exempt from most Federal nutrition requirements. Often prominent and visible in schools, they contribute to obesity and unhealthy food choices.

A la carte lines allow students to choose cafeteria foods that may be part of a Federally-reimbursable program meal, without choosing healthy meal components that make that meal consistent with nutrition standards. As a result, students who choose a la carte foods are less likely to consume appropriate amounts of key foods and nutrients than those who do not.[181]

Many schools offer foods in vending and snack bars that may undermine more balanced offerings at meal time. Foods commonly available in these venues include cookies, crackers, pastries, and other high-fat baked goods, as well as salty snacks and sports drinks.[182]

Some schools rely on food sales to cover the cost of extracurricular activities and other expenses.[183] This can lead to offerings driven by popularity and revenue potential, rather than nutrition. However, many schools found that offering healthier foods did not decrease revenue, and in some cases, increased revenue.[184]

In too many schools, such foods facilitate poor nutritional choices for students,[185] and accustom children to poor dietary practices that may ultimately contribute to obesity. They also undermine parents' efforts

to promote a healthy diet for their children. Evidence in some states reveals that setting standards for foods competing with program meals can improve students' consumption of more healthy food options.[186]

Recommendations

Like school meals, local schools must work hand-in-hand with Federal, Tribal, and state governments to reshape their competitive food policies. Key actions can help advance this goal.

Recommendation 3.8: Increase the alignment of foods sold at school, including in the a la carte lines and vending machines, with the Dietary Guidelines. Under current law, USDA has very limited authority to set and enforce standards for foods regularly sold outside the Federally-supported school meals programs. In the upcoming reauthorization of the Child Nutrition programs, the Administration is committed to gaining authority to develop and issue these standards for schools participating in USDA programs, and the food and beverage industry has stated its strong support for Congress providing USDA with this authority.[187] The standards would be developed through a transparent and participatory public rulemaking process, and the Institute of Medicine's evidence-based recommendations for such standards[188] can serve as a foundation for the USDA's proposal.

Recommendation 3.9: Food companies should be encouraged to develop new products and reformulate existing products so they meet nutritional standards based on the Dietary Guidelines and appeal to children. Food manufacturers and marketers have a critical role to play in meeting new standards, and have already shown an ability to adapt their products to appeal to more nutrition-conscious consumers over the past several years. These industries should be encouraged to continue to use their energy and ingenuity to develop foods that schools can offer within and outside of the school meals programs. These foods should support healthy diets and offer the taste and convenience needed to appeal to students. For example, food companies should be encouraged to:

- Offer whole grain-rich bread and cereal products such as sandwich rolls and pastas;
- Reformulate entrees, sauces, and condiments to contain less sodium, while incorporating alternative flavorings and seasonings to maintain palatability; and
- Reduce the high levels of added sugars in many flavored milks and yogurts.

Benchmarks of Success

Assuming new Federal standards for the nutritional quality of all foods in schools are in effect by 2013, schools should achieve full substantive compliance by that date. In the meantime, progress can be measured by an increase in the number of schools meeting the HealthierUS School Challenge, described above. "Substantive compliance" is meant to denote full consistency between all foods sold in school and Federal standards; any non-compliant schools should be working on USDA-approved corrective actions to achieve substantive compliance.

C. Food-Related Factors in the School Environment

Many facets of the school setting can affect children's dietary choices. Some operate directly on their eating behaviors, while others are more subtle. In too many schools, the connection between service of meals and other foods at school and the responsibility to educate, enable, and motivate healthful nutrition habits is weak or non-existent.

Nutrition Education

More, and better, nutrition education is needed in many schools. While approximately 75% of schools require nutrition education as part of health curriculum requirements, the time spent on nutrition and dietary behavior has declined in recent years, and funding has been limited.[189] Many teachers are not equipped with the skills and knowledge to integrate and promote nutrition education into their classroom curricula. Research has shown that nutrition education interventions, if well designed and effectively implemented can improve dietary behaviors.[190]

Lunch Room Environment

Eating behaviors can also be shaped by the cafeteria and lunch room setting, such as the display and description of food and beverages, pricing and methods of payment, and the length of time and time of day made available to eat.[191] Some experiments indicate that these factors can promote healthy choices,[192] although it is not yet clear precisely how such strategies can best be applied in schools.

In addition, some schools' meal service arrangements discourage some children, particularly low-income children, from taking advantage of school meals, undermining the impact of improvements in the nutritional quality of those meals. For example, one survey found that one-third of high schools had separate lines or rooms for the school lunch program and competitive foods. In many of those schools, the vast majority of the students standing in the lunch line were low income.[193] Marketing of food and beverages within schools has also grown substantially in recent years, and may influence food choices in ways that do not contribute to good health.[194]

In addition, some middle and high schools permit students to leave campus for lunch. One study found that 29% of high schools reported having an "open campus" lunch policy.[195] For those who eat lunch off-campus, improvements in school meals will have little impact on their dietary intake. Some schools are also surrounded by fast-food restaurants with few healthy options.[196]

Schools should also be made aware of factors that can impact a child's decision about what to eat, including food allergies and religious restrictions, and they should be encouraged to use existing options to accommodate children's needs.

Recommendations

Recommendation 3.10: USDA and the U.S. Department of Education should collaborate with states to increase the availability and consistency of nutrition education in schools. States should be encouraged to ensure that teacher preparation requirements include basic nutrition knowledge and nutrition education as part of every teacher's skill set. USDA and the U.S. Department of Education should work together to improve national standards and requirements for nutrition education. Teachers in local

schools can explore interdisciplinary approaches to incorporate healthy eating in the school curriculum (for example, history may have a subject related to healthy diets, math may include how to calculate the needed caloric intake, foreign languages may have students design a menu). The Bureau of Indian Education, Teach for America, and other teacher corps programs could also expand their partnership to include nutrition education.

Recommendation 3.11: Where possible, use school gardens to educate students about healthy eating. School gardens offer opportunities for fun and physical activity while also serving as an important educational tool to help students understand how healthful food is produced. Some research suggests that school gardens used as part of a nutrition education strategy can increase knowledge of fruits and vegetables and influence behavior change among children.[197] Schools can further make the link between agriculture and nutritious food by inviting local farmers markets to operate from area school yards. Parents and students can also share their knowledge when shopping together for locally grown fruits and vegetables or participating in Community Supported Agriculture programs.

Recommendation 3.12: Technical assistance should be provided to schools about how to a cafeteria and lunch room environment can support and encourage a healthful meal. Factors such as the timing and length of the meal period; cleanliness and noise level in the dining room; and adequate space for eating can all play a role in what children consume.

Recommendation 3.13: Schools should be encouraged to ensure that choosing a healthy school meal does not have a social cost for a child. Efforts that make school meals more nutritious and appealing cannot effectively improve students' choices if other factors undermine their opportunity to select them. For example, many schools provide reimbursable meals at a different serving station than a la carte foods. Children can be discouraged from considering full meals if they are not exposed to them. Furthermore, in schools where most meals are served free or at reduced-price, separating lines can create a perception that program meals are intended only for lower-income students, potentially creating a stigma that prevents children who cannot afford a la carte food from eating at all.[198] Schools should be encouraged to examine their operational practices to ensure that all students have a full opportunity to consider and choose a school meal.

Recommendation 3.14: Schools should be encouraged to consider the impact of food marketing on education. Food marketing can occur at school in a number of forms, including on scoreboards, food display cases, and vending machines; in student publications, educational materials provided "free" by food firms, branded fundraisers and food reward programs; and even market research conducted on campus.[199] Schools should be encouraged to limit school-based marketing that contributes to poor health. Private companies should be encouraged to voluntarily shift towards the promotion of healthy foods and away from advertising that promotes unhealthy products.

Recommendation 3.15: School districts should be encouraged to create, post, and implement a strong local school wellness policy. Recognizing the critical role schools play in promoting students' health, preventing childhood obesity, and combating poor nutrition and physical inactivity, Congress passed a law requiring school districts to establish a local wellness policy in 2004. This policy would sets goals for nutrition education, physical activity, campus food provision, and other school-based activities designed to promote student wellness. School boards and other community leaders should

work to ensure this policy reflects the abovementioned recommendations, while tailoring them to their communities' needs. Tribes can work with the National Indian Education Association and National Indian School Board Association to develop an effective school wellness policy that reflects Tribal values and culture. USDA should also seek authority in the Child Nutrition and WIC Reauthorization Act to strengthen school wellness policy development, implementation, monitoring, and evaluation. The U.S. Department of Education should work with USDA to support these efforts.

To aid in the development and implementation of the wellness policy, schools should consider establishing a health advisory council, as a number of communities have done. These councils, comprised of school officials and staff, parents, local public health authorities, and other community members, foster an exchange of information on a wide range of issues that influence the local school environment. They also provide support, oversight, and accountability for school nutrition improvement efforts.[200]

Benchmarks of Success

Increase in the number of school districts that provide a healthful school environment, which could include such features as nutrition education integrated into school programming; lunch room environments that support healthy eating; strong marketing policies; and a school health advisory council. Progress can be assessed using data from the School Health Policies and Programs Study (SHPPS), which is conducted every six years by CDC's National Center for Chronic Disease Prevention and Health Promotion. The most recent SHPPS data is for 2006; the next study will be done in 2012 and released in 2013.

D. Food in Other Institutions

Other institutions that play a significant role in the lives of children and young adults do not consistently support healthful nutrition behaviors.

Afterschool Programs

For many children, school activities do not end when the last bell rings. Afterschool programs, such as expanded day care centers, tutoring and other instruction programs, and 21st Century Community Learning Centers, serve children in elementary schools across the nation. In 2008, 56% of public elementary schools offered one or more such programs.[201] As with school during regular hours, the afterschool environment influences the eating behaviors of participating children. Because many of these programs operate in low-income communities where access to food may be more limited, incorporating healthful meals and snacks can be especially important. Federally-supported afterschool snacks are available through the National School Lunch Program (NSLP) and the Child and Adult Care Food Program (CACFP). Support for more substantial meals like supper is available through CACFP for low-income communities, but currently in only a limited number of states.

Juvenile Detention and Correctional Settings

While limited research exists on the nutritional services for youth in the juvenile detention and correctional facilities, anecdotal evidence suggests that many detained and incarcerated youth consume diets high in fat, cholesterol, and sodium and low in fresh fruit and vegetables. These types of diets are particularly problematic for incarcerated youth with special dietary needs. In addition, facilities may not employ or have access to licensed nutritionists or dietitians to oversee institutional food services.

Providing appropriate nutrition in juvenile detention and correctional settings is underscored by the population size and the risk factors for weight related problems facing these youth. Data shows that in 2007 more than 360,000 delinquency cases resulted in youth being placed in secure detention and nearly 149,000 resulted in youth being placed out of their home.[202] During a one-day count in 2008, approximately 80,000 youth were housed in 3,000 publicly and privately operated juvenile facilities, including public, private, and tribal facilities.[203]

Many of these young people are at risk for or have serious health concerns that are often undiagnosed or untreated, and they experience physical and mental health problems at rates exceeding those in the general youth population.[204] They are frequently children who have experienced severe familial dysfunction, witnessed violence, or have been victims of physical and sexual abuse.[205]

Many juvenile detention centers operate the National School Lunch Program and School Breakfast Program, but it is unclear how many such institutions offer meals that are consistent with the programs' nutritional requirements. Effective nutrition education, institutional food services, culinary arts, and recreational programming are critical components in addressing the overall health care needs of this vulnerable group.

Recommendations

Recommendation 3.16: Promote good nutrition through afterschool programs. Afterschool programs face distinct circumstances and challenges beyond those that impact children and young people during the school day. States and communities can develop standards and strategies tailored for afterschool programs by building on and integrating the afterschool snack components of USDA's Child Nutrition programs. The Federal government could develop and offer model approaches and resources to inform these efforts.

Recommendation 3.17: Promote healthy behaviors in juvenile correctional and related facilities. States and localities should be encouraged to ensure that juvenile justice facilities use nutrition programs available to them, such as USDA's school meal programs. Federal, state, and non-governmental organizations should collaborate to develop evidence-based programs and standards for health promotion and disease prevention services, including nutrition counseling, meal services, and recreational programs that meet the needs and circumstances of juvenile justice populations. Related programs such as organic fruit and vegetable gardening, farming, and culinary arts initiatives in juvenile justice facilities can potentially promote health, education, workforce development, and positive youth development.

Benchmarks of Success

As this area is explored further, it may be appropriate to develop benchmarks to track progress in improving nutritional outcomes in these settings.

Key Questions for Future Research

- How can we make healthy foods more affordable for use in schools? And more attractive to children?
- What can we learn from behavioral economics to support healthful eating in schools, and how can schools promote healthful eating over the longer term?
- What are the correlative and/or causal linkages between exposure to food marketing in schools and food consumption patterns or obesity?
- How can effective school-based nutrition education models be identified and scaled up to national implementation?
- How does participation in the afterschool snack and meal programs supported by USDA affect children's diets, opportunities for nutrition education and physical activity?
- To what extent are health promotion and disease prevention services such as nutrition counseling, improved diet, and recreational programs, provided to youth in the juvenile justice system? What evidence-based food services, nutritional education, and exercise programming can best address the needs of youth involved in juvenile justice systems?

IV. Access to Healthy, Affordable Food

Healthy options can be hard to find in too many communities. Millions of low-income Americans live in "food deserts," neighborhoods that lack convenient access to affordable and healthy food. Instead of supermarkets or grocery stores, these communities often have an abundance of fast-food restaurants and convenience stores. In addition, stores in low-income communities may stock fewer and lower quality healthy foods. When available, the cost of fresh foods in low-income areas can be high. Public transportation to supermarkets is often lacking, and long distances separate home and supermarkets in many rural communities and American Indian reservations. It is hard for residents of these areas—even those fully informed and motivated—to follow the necessary and recommended steps to maintain a healthy weight for themselves and their children. Too often, economic incentives strongly favor unhealthy eating, and accessibility, safety concerns, and convenience can also promote unhealthy outcomes.

Limited access to healthy food choices can lead to poor diets and higher levels of obesity and other diet-related diseases. In addition, limited access to affordable food choices can lead to higher levels of food insecurity, increasing the number of low- and moderate-income families without access to enough food to sustain a healthy, active life. There is a growing, though incomplete, body of research that finds an association between food insecurity and obesity, suggesting that hunger and obesity may be two sides of the same coin.

Many communities around the country have already taken steps to make healthy and affordable foods accessible to all residents because of the potential to improve diet quality and reduce obesity, as well as to create jobs, increase local investment and economic activity, and revitalize neighborhoods. This chapter recommends a comprehensive approach that builds on a promising start to mobilize public and private sector resources to make the healthy choice the easy choice for all Americans.

Specifically, this chapter lays out four key elements for ensuring access to healthy, affordable food:

- Convenient physical access to grocery stores and other retailers that sell a variety of healthy foods;
- Prices that make healthy choices affordable and attractive;
- A range of healthy products available in the marketplace; and
- Adequate resources for consumers to make healthful choices, including access to nutrition assistance programs to meet the special needs of low-income Americans.

A. Physical Access to Healthy Food

Too many Americans live in communities with limited access to supermarkets and grocery stores. Nationwide, USDA estimates that 23.5 million people, including 6.5 million children, live in low-income areas that are more than a mile from a supermarket. Of the 23.5 million, just under half have incomes at or below 200% of the poverty line, and almost 1 million do not have access to a car. USDA estimates

that 2.3 million people live in low-income rural areas that are more than ten miles from a supermarket; and again, just under half have low incomes.[206]

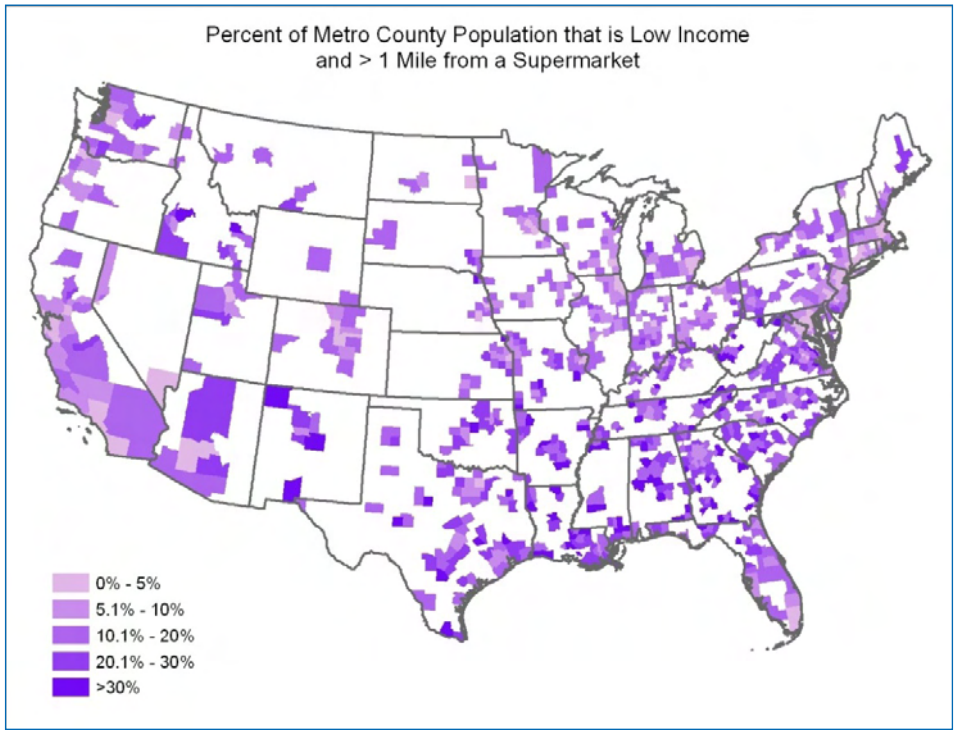
Limited access to healthy foods plays a significant role in poor dietary decisions. A scarcity of healthy foods makes it more difficult for low-income residents to adhere to a nutritious diet than for their counterparts in wealthier, resource-rich neighborhoods.[207] Residents with better access to supermarkets and limited access to convenience stores tend to have healthier diets and lower levels of obesity. Although less consistent, studies do suggest that residents with limited access to fast-food restaurants have healthier diets and lower levels of obesity.[208]

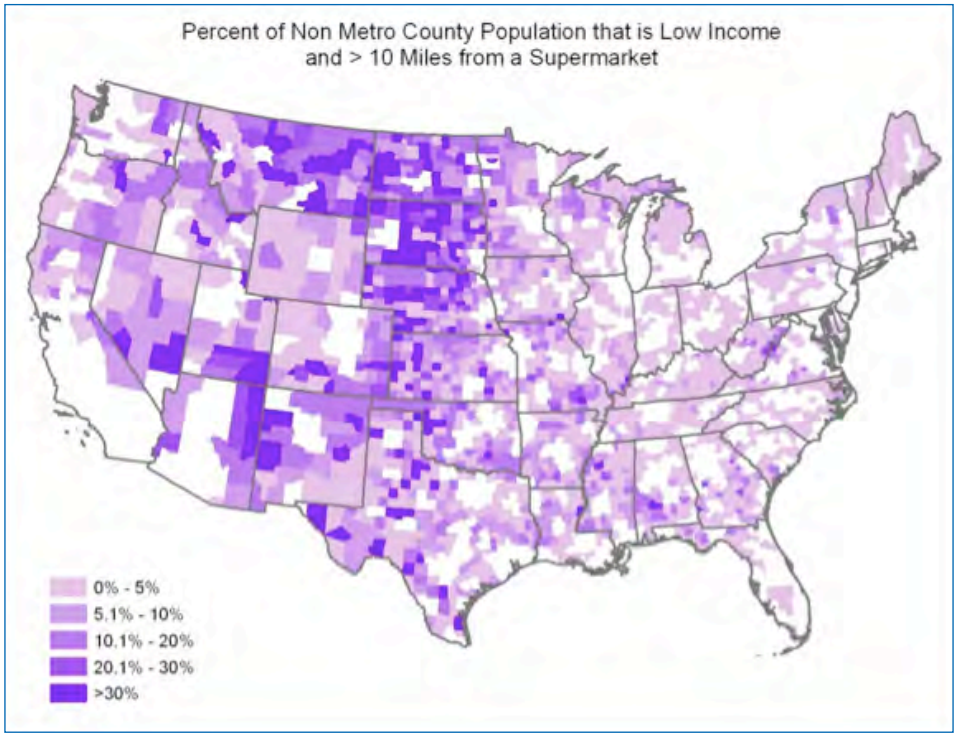
Access to supermarkets, grocery stores, and specialty markets is important, in part, because they give consumers access to a variety of fruits and vegetables. Diets rich in fruits and vegetables offer a number of health benefits[209] and have been linked to a lower prevalence of obesity or reduced weight gain.[210] Most Americans, especially those with low income, consume far fewer fruits and vegetables than recommended by current dietary guidance,[211] and a lack of easy accessibility may be one reason. A number of studies suggest that better retail access corresponds with healthier eating. Residents with more access to supermarkets or a greater abundance of healthy foods in neighborhood food stores consume more fresh produce and other healthful items. Without nearby access to healthy ingredients, families have a harder time meeting recommended dietary guidelines.[212]

Some research has found significant associations between the availability of food stores and adolescent BMI. The availability of chain supermarkets was associated with lower adolescent BMI and overweight status, while the availability of convenience stores was associated with higher adolescent BMI and overweight status.[213]

Many factors contribute to an individual's overall diet, body weight, and the risk of developing diet-related diseases such as diabetes or cardiovascular disease. Individual factors can explain some but not all of the differences in the rates in which different groups experience these problems. Attention on the relationship between retail food access and obesity has increased as researchers obtain a better understanding of the factors besides individual behaviors that may lead to differences in diet and health outcomes.

Food Deserts in Urban and Rural America





Creative tools can be used to assess a community's needs. For example, Michigan's Department of Public Health has developed an online Nutrition Environment Assessment Tool (NEAT) to help communities assess the extent to which they promote and support healthy eating.[214] The U.S. Department of Defense adopted this tool for use by commanding officers and other stakeholders to make similar assessments of military communities and facilities.[215] A number of policy interventions can lead to improved access to healthy, affordable food. Communities can bring supermarkets to underserved neighborhoods, help smaller groceries or corner stores expand their stock of healthy and affordable food, and develop other retail outlets such as farmers' markets, public markets, cooperatives, farm stands, community-supported agriculture, and mobile vendors. These efforts also create jobs, bolster local economies, and revitalize neighborhoods, contributing to local economic development. A number of communities have undertaken these kinds of efforts, through projects such as Pennsylvania's Fresh Food Financing Initiative.

Faith-based Organizations Find Creative Solutions to "Food Deserts"

There is no one-size-fits-all solution to the problem of food deserts in America. In some communities, it may be economically feasible to bring in a supermarket and sustain it over time; in others, the solution may be a mobile grocery store that comes through town once a week but provides access to healthy foods that community residents otherwise would lack.

Some of the most creative strategies have come from faith-based organizations, many of which have a long tradition of helping to meet the food needs in their communities, through food pantries and other anti-hunger efforts. Here are just a few examples:

- The Central Detroit Christian Community Development Corporation operates the **"Peaches & Greens" Produce Truck**, which travels through the streets of central Detroit like an ice cream truck, stopping to sell fruits and vegetables to area residents. The organization has also arranged for a number of corner stores to sell "Peaches & Greens" produce.
- In South Los Angeles, the First African Methodist Episcopal Church has arranged for the **open-air So Fresh Market** to operate in its parking lot. The market welcomes families to participate in free activities and live entertainment, while fresh and natural foods are sold to promote a healthy lifestyle and patrons are invited to watch as cooks present quick and easy meal demonstrations. Partnering with the market is part of a broader effort by the church to promote healthier eating among African Americans in the community.

Direct-to-consumer marketing outlets provide another path to increase healthy food access in underserved areas and stimulate economic development in rural communities across America. These opportunities, including farmers' markets, farm stands, and community supported agriculture enterprises, are currently promoted by the USDA through its Know Your Farmer, Know Your Food Initiative.

There are also many publicly and privately managed facilities that are frequented by children and their families, including at meal times, such as national, state, and local parks, as well as privately-run amusement parks, sports venues, and other recreational facilities for children. These places can be considered small scale "food deserts" because meals or snacks are available for purchase but few, if any, healthy options are available.

Recommendations

Recommendation 4.1: Launch a multi-year, multi-agency Healthy Food Financing Initiative to leverage private funds to increase the availability of affordable, healthy foods in underserved urban and rural communities across the country. As proposed in the President's FY11 Budget, through this initiative, USDA, HHS, and the Treasury Department will partner to make over $400 million available to community development financial institutions, nonprofits, public agencies and businesses to promote interventions that expand access to nutritious foods. Such interventions include helping grocery stores, small businesses, and other retailers provide healthy food options in lower-income communities. Interventions may also include helping improve supply chains to bring fruits, vegetables, and other healthy foods from rural agricultural areas to urban stores and markets. Private sector investments are a critical part of this initiative's success, since they provide up-front capital and sustain the investments until these stores have a chance to establish themselves in the community and build a strong customer base.

In addition to these new resources, communities can access existing Federal grant and loan programs, as well as state, local, and private funds to create market opportunities for producers and to support regional planning systems that ensure greater access to healthy food in underserved areas. Resources include USDA's Farmers' Market Promotion Program, Specialty Crop Block Grants, Community Food Projects, Community Facilities Program, Business and Industry Guaranteed Loan Program, Healthy Urban Food Enterprise Development Center, and Sustainable Communities Regional Planning grants; HHS' Community Economic Development Program; and the U.S. Department of Housing and Urban Development's Community Development Block Grant and Choice Neighborhood initiative.

Land Use and Food System Planning

Many communities have had an opportunity to promote access to fresh foods and urban agriculture as a component of their land-use and food system planning processes. Across the country, projects are helping to create, enable, and fund community garden and urban agriculture programs, and developing zoning and permitting processes friendly to urban agriculture and healthy food access. Community gardens can provide culturally significant foods not available in local grocery stores. For example:

- The city of Fresno changed its zoning ordinance to allow farmers markets in all non-residential and certain single-family residential zones. Now, Fresno planners want to plan for urban agriculture in newly developing areas.
- Vendors in Kansas City who sell healthy foods pay a reduced permit fee. City planners also list recommended and excluded products for public vending in the city's parks and recreational areas.
- New York City uses a combination of incentives and restrictions to get green produce carts in areas of the city with the least access to fresh fruits and vegetables.
- Detroit and Cleveland have reclaimed acres of vacant land and lots for community gardens.

Recommendation 4.2: Local governments should be encouraged to create incentives to attract supermarkets and grocery stores to underserved neighborhoods and improve transportation routes to healthy food retailers. Incentives could include tax credits, grant and loan programs, and small business or economic development programs. Communities could also develop zoning requirements that create safe, non-motorized routes such as sidewalks, pedestrian malls, and bicycle paths between all neighborhoods and supermarkets, grocery stores, or other retailers who sell healthy food.[216] Local communities can also commit job training resources to ensure that a well-trained workforce is available for healthy food retailers who are considering locating in their area.

Recommendation 4.3: Food distributors should be encouraged to explore ways to use their existing distribution chains and systems to bring fresh and healthy foods into underserved communities. The private supply chains that have been developed to bring healthy foods to restaurants and less healthy items to corner stores and grocery stores should be deployed to bring healthy foods to communities that lack these retail options. USDA, as part of its Know Your Farmer, Know Your Food initiative, can also play a role in developing food hub distribution centers to increase opportunities for regional distribution.

Recommendation 4.4: Encourage communities to promote efforts to provide fruits and vegetables in a variety of settings and encourage the establishment and use of direct–to-consumer marketing outlets such as farmers' markets and community supported agriculture subscriptions. Options that communities could consider include the following:

- Promote the use of WIC cash value vouchers, WIC and Seniors Farmers' Market coupons, and SNAP benefits in farmers markets and other settings where fruits and vegetables are sold;
- Fund outreach, education, and transportation to encourage residents of lower-income neighborhoods and nutrition assistance program participants to use farmers' markets and farm stands;
- Use land use policies to promote, expand, and protect potential sites for community gardens and farmers' markets such as vacant city-owned land or unused parking lots;
- Develop community-based group activities that link procurement of affordable, healthy food with improving skills in purchasing and preparing food;
- Provide incentives to purchase and sell local native-grown produce to Indian schools and communities; and
- Consider the adoption of ordinances or by-laws that promote healthy food vendors and mobile fruit and vegetable vendors in low-income and geographically isolated neighborhoods.

Recommendation 4.5: Encourage the establishment of regional, city, or county food policy councils to enhance comprehensive food system policy that improve health. Experience in some communities has shown that food policy councils can bring together citizens and government officials to examine state or local food systems. This unique form of civic engagement assembles diverse food system stakeholders to develop food and agriculture policy recommendations.

Recommendation 4.6: Encourage publicly and privately-managed facilities that serve children, such as hospitals, afterschool programs, recreation centers, and parks (including national parks) to implement policies and practices, consistent with the Dietary Guidelines, to promote healthy foods and beverages and reduce or eliminate the availability of calorie-dense, nutrient-poor foods.

Healthy Foods in Our Parks

Healthy food is often hard to come by on America's public lands. Traditionally, concessioners have provided visitors with a limited number of options, many of which are calorie-laden and highly processed. In cafeterias and snack stands across the National Park System, concessioners are beginning to provide a broader range of healthy, organic, and local foods. The Park Service administers approximately 600 concessions contracts across its 392 units, grossing about $1 billion annually. Recently, individual parks have taken the lead in working with their concessioners to revamp and revitalize traditionally limited, menus.

At **Golden Gate National Parks' Muir Woods Trading Post**, Ortega Family Enterprises provides a range of low-sugar, reduced-calorie, and organic food, much of which is locally sourced. All of these items are affordably priced and have raised profits for the park and the concessioner alike. Similarly healthy offerings can be found at the company's other National Park outposts in New Mexico. Healthful concessions are also found in **Yellowstone and Grand Teton National Parks**, which offer a range of all-natural and vegetarian options. Far away from the big western parks, the **Statue of Liberty** boasts a range of healthy options in a densely populated urban area. **Baltimore's Fort McHenry** is preparing to open a new cafeteria based on a model school lunch program. And on the **National Mall**, concessioners are now serving low-fat snacks like fruit and yogurt and lunches like vegetable hummus wraps.

Benchmarks of Success

Eliminate food deserts in America in seven years. To monitor progress towards this goal, USDA will estimate the number of people in low income areas more than a mile from a supermarket or large grocery store (10 miles in rural areas) every three years beginning in 2012, using demographic data from the American Community Survey and store location information from commercial sources and USDA's directory of stores authorized to accept SNAP benefits.

B. Food Pricing

Prices have a large effect on consumer choices. Consumer behavior has shifted as food prices have declined and low cost, energy-dense foods have become more convenient. Technological advances have made food cheaper. One study found that food prices dropped in comparison to all other goods, over a 50 year period.[217] But these price advantages do not extend to all types of food. Over the last 30 years, prices for fruits and vegetables increased nearly twice as fast as the price of carbonated drinks.[218]

An increase in the price of fruits and vegetables relative to less healthy foods can reduce consumers' incentives to purchase fruits and vegetables, resulting in less healthy diets. Some analyses suggest that energy-dense foods composed of refined grains, added sugars, or fats remain the lowest-cost option to the consumer.[219] It is widely believed that American consumers have seen a significant increase in prices of fruits and vegetables alongside a decrease in the prices of foods that contribute to obesity. Because of quality improvements in fresh fruits and vegetables, however, it is difficult to draw conclusions about the trends in prices and incentives. One recent analysis found that prices declined for commonly consumed fresh fruits and vegetables for which quality has remained fairly constant, as well as for snack foods. This evidence suggests that the price of a healthy diet has not changed relative to an unhealthy one.[220]

Nonetheless, it is not disputed that the prices of some unhealthy foods have fallen, and that prices play a significant role in consumer choices.

Prices change over time for a variety of reasons. Better production and distribution technologies generate more and better goods, driving down prices. Foods that once were available only seasonally are now available year-round. Advances in food processing and packaging have introduced a multitude of ready-to-eat foods, available virtually anywhere and anytime. Farm programs have been designed to stabilize crop prices for farmers and may affect production decisions, commodity prices, and ultimately the prices consumers pay. State and local sales taxes imposed on soft drinks, candy, and snacks raise their cost relative to other food purchases. Nutrition assistance programs subsidize meals for millions of low-income Americans, reducing the relative price of food compared to other consumer needs. As a result, there are many opportunities to affect the cost of healthy food.

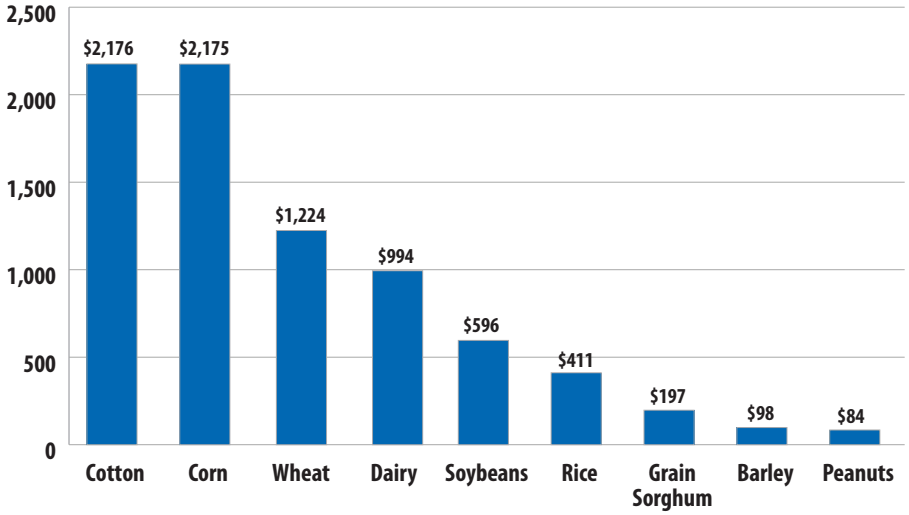
Studies suggest that if the price of a particular food increases or decreases, consumption will decrease or increase. Research has found increases in purchases of healthier foods when prices are reduced, and decreases in purchases of less healthy foods as prices increase.[221] The potential influence of food prices on consumption necessitates consideration of the extent to which changes in farm, tax, and subsidy policies might affect consumption patterns.

Agriculture Policy

Since the Great Depression, American farm policy has been designed to stabilize crop prices, keep farmers producing food and fiber, and provide American families with an abundant, affordable, and reliable food supply. Eligible farmers receive support through a variety of Federal programs. Nearly all the subsidies go to growers of five commodities: soybeans, corn, rice, wheat, and cotton. In comparison, relatively few subsidies support fruit and vegetable farmers, although the Food, Conservation, and Energy Act of 2008 included, for the first time, $1.3 billion in new funding over 10 years for specialty crops—fruits, vegetables, and nuts—and increased programs that support local agriculture and healthy foods. It also included a pilot project to allow planting of fruits and vegetables on base acres for USDA's farm commodity price and income support programs in a limited number of states.

Additional studies should be conducted to determine whether current agricultural policy has an impact on the availability and pricing of different types of food and American diets. For example, the orientation of farm program payments toward a group of commodities may have an impact on the composition of the food supply and the relative availability of certain commodities. USDA's Economic Research Service has estimated that to establish a sufficient supply of fruits and vegetables for all Americans to meet the *Dietary Guidelines*, U.S. producers would have to more than double their fruit acreage (from 3.5 million acres today, to 7.6 million) and increase vegetable acreage by nearly one and a half times (from 6.5 million acres today, to 15.3 million).[222]

In addition, some research on the link between obesity and farm programs finds that our farm programs have had small and mixed effects on farm commodity prices, resulting in smaller effects on relative retail prices. Over the past 15 years, most farm subsidies have been in the form of direct income support that is not connected to actual production. One analysis found that direct income support did not significantly affect the affordability of food, either on the whole or within food groups.[223]



Source: U.S. Department of Agriculture. (2010). Agricultural Outlook: Statistical Indicators, Table 35. Retrieved April, 2010 from http://www.ers.usda.gov/Publications/AgOutlook/AOTables/

While farm subsidies have lowered some commodities' prices, their effects may be countered by policies that restrict acreage or production, which potentially increase prices. In addition, the cost of farm commodities represent only a small and shrinking share of the cost of retail food products, on average less than 19%, making changes in commodity prices translate to small changes in the prices consumers pay.[224] One study found, for example, that the corn content of high fructose corn syrup represented about 1.6% of the value of soft drink manufacturing costs and sugar just 0.1%. In turn, small changes in prices are likely to induce only small changes in consumption.[225] As noted above, however, further research can help respond to the underlying questions.

Tax Policy

The Institute of Medicine and others have recommended that governments implement a tax strategy to discourage consumption of foods and beverages that have minimal nutritional value as a step in the fight against childhood obesity. Based on the notion that consumers will respond to the increased food cost by reducing their consumption, a tax could generate considerable revenue to fund obesity-fighting programs.[226] Many states already tax caloric-sweetened food and beverages.

The effectiveness of taxing food purchases primarily depends on the degree to which consumers are aware of and respond to changes in food prices. One review suggests that the percentage change in consumption is generally smaller than the percentage change in price.[227] Consumers may, however, be fairly responsive to a price change in caloric-sweetened sodas, fruit drinks, and sports drinks. The extent of the response would certainly be affected by the size of the change in price. Recent research indicates that current state-level tax rates on soda purchases have had a relatively small impact on adolescent[228] and adult weights.[229] But a higher tax rate would likely have a greater impact on consumption, as evidenced by the effects of the substantial rise in tobacco taxes.[230]

Retail State sales and vending machine "snack tax" rates, 2009								
	Sales Tax				**Vending Machine Tax**			
Product	**Number of States**	**Average Tax Rate**	**Min Rate**	**Max Rate**	**Number of States**	**Average Tax Rate**	**Min Rate**	**Max Rate**
Soda	33	5.2	1.2	7.0	39	5.3	1.2	8.0
Candy	29	4.8	1.0	7.0	37	5.1	1.0	8.0
Gum	28	4.7	1.0	7.0	38	5.0	1.0	8.0
Ice cream	18	4.2	1.0	7.0	35	5.0	1.0	8.0
Popsicles	16	4.0	1.0	7.0	33	5.0	1.0	8.0
Chips/pretzels	14	3.7	1.0	7.0	32	5.0	1.0	8.0
Milkshakes/ Baked goods	14	3.7	1.0	7.0	33	5.0	1.0	8.0

Source: Bridging the Gap: www.impacteen.org/obesitystatedata.htm

Subsidy Policy

Providing incentives or subsidies to encourage greater consumption of healthier food choices offers an alternative to taxes on foods of limited nutritional value. In experiments, targeted price changes have increased purchases of healthier snacks from vending machines. For example, a 50% price reduction on fresh fruit and baby carrots in two secondary school cafeterias resulted in a four-fold increase in fresh fruit sales and a two-fold increase in baby carrot sales.[231] Another experiment used a simple color-coded label of red (least healthy), yellow, or green (most healthy) based on fat and calorie content and added a five cent "tax" (approximately 8% of the product's value) on each red item. After one year, this resulted in a 5% decrease in sales of least healthy items, a 16% increase in the sale of most healthy items, and overall sales increased as well.[232]

A recent study on the effect of price subsidies on healthy food consumption among SNAP participants suggests that a 10% subsidy for vegetables and fruits would increase vegetable consumption from 1.26 cups to 1.33 cups per day, and fruit consumption from 0.89 cup to 0.97 cup. These increases in consumption bring individuals closer to the recommended levels, closing the gap by 4.7% for vegetables and 7% for fruits.[233]

Since 2005, a group of farmers markets, foundations, local governments, and nonprofit organizations have collaborated on pilot incentive programs to expand USDA programs to improve the health and nutrition of low income families and their children. Wholesome Wave's Double Value Coupon Program increases the value of SNAP and other program benefits when used at participating farmers markets, reducing the cost of fruits and vegetables for low-income participants. Initiated in 2008, the program has expanded to more than 60 markets in 12 states and the District of Columbia. Early results from participating farmers markets often indicate a 300% increase in SNAP and WIC use at farmers markets with the introduction of double voucher incentive programs.[234]

Recommendations

Recommendation 4.7: Provide economic incentives to increase production of healthy foods such as fruits, vegetables, and whole grains, as well as create greater access to local and healthy food for consumers. The upcoming reauthorization of programs governed by the Food, Conservation and Energy Act of 2008 provides another opportunity to strengthen Federal farm and food policy to help meet the needs of all Americans.

Recommendation 4.8: Demonstrate and evaluate the effect of targeted subsidies on purchases of healthy food through nutrition assistance programs. Through the Healthy Incentives Pilot, the Food, Conservation, and Energy Act of 2008 provided $20 million to determine if incentives provided to SNAP recipients at the point-of-sale increase the purchase of fruits, vegetables, or other healthful foods. The evaluation of this pilot, still in the early development stages, will offer solid evidence on whether a financial incentive can influence fruit and vegetable purchases and consumption.

Recommendation 4.9: Analyze the effect of state and local sales taxes on less healthy, energy-dense foods based on nutrient content or categories with low nutritional value (such as soft drinks, candy, snack foods, and fast foods).

Benchmarks of Success

By 2020, increase the availability of fruits and vegetables in the American food supply by 70%, or 450 pounds per person per year. In 2008, the American food supply included 643.6 pounds of fruit and vegetables per person—about 251 pounds of fruit and 393 pounds of vegetables.[235] A recent USDA analysis suggested that to bring American diets into alignment with recommendations in the 2005 Dietary Guidelines, consumption of fruit would have to increase by 132%, and consumption of vegetables would have to increase by 31%.[236] The increased supply of fruit and vegetables needed to support these consumption changes would total 1,096 pounds per person—an increase of 453 pounds, or over 70%.

USDA prepares these estimates of fruit and vegetables in the food supply on an annual basis, drawing on data from a variety of government and private sources, including farm production and stocks information from the Census of Agriculture, trade information from the U.S. Census Bureau and USDA's Agricultural Marketing Service, and information on processed products from trade association reports. Per capita estimates are calculated using population estimates for that particular year.

C. Product Formulation

In addition to ensuring access to supermarkets and grocery stores, these stores must also provide healthy options at affordable prices. Consumer demand plays an essential role in the range of foods available, yet decisions that the food and agriculture industries make in responding to these demands determine what is on store shelves. Parts of the food industry are undertaking efforts to reformulate products, and through concerted efforts, the marketplace can move faster and farther. To address the obesity crisis, we must expand and accelerate efforts to reformulate products, particularly those aimed at kids, so they have less fat, salt, and sugar, and more of the nutrients children need.

It is easy for companies to take advantage of the human craving for sugary, fatty, salty foods by creating products that are sweeter, richer, and saltier than ever before. Doing so does not just respond to people's natural inclinations, it also helps shape them. This is particularly dangerous for our Nation's children, as these foods become embedded in their life-long eating habits.

There is another choice. Just as we can shape children's preferences for high-calorie, low-nutrient foods, we can also shape their preference for high-quality, healthier foods. Making this a reality requires a serious industry-wide commitment to provide parents with healthier food options at affordable prices.

The food industry has shown that it can respond to new consumer demands, including demands related to health and nutrition. In 2008, manufacturers introduced about 23,000 new products, with claims such as "natural," "fresh," "organic," "no preservatives," "low or no trans fat," and "high vitamin," used to market about 25% of these new products.[237] In the competition for health-conscious consumers, processed food manufacturers quadrupled the average number of new whole-grain products introduced between 2001 and 2006.[238]

Rather than finding creative ways to market existing products as healthy, we must develop new products proven to be healthy—products that help shape the health habits of an entire generation. Products like baby carrots and apple slices have proven appealing to children, as well as whole grains. Developing and marketing more of these products, as well as reducing sugar in items popular with children like flavored milk or yogurt, help children form healthy habits and ultimately, combat the obesity trend.

Recommendations

Recommendation 4.10: The food, beverage, and restaurant industries should be encouraged to use their creativity and resources to develop or reformulate more healthful foods for children and young people.

- Industries should be encouraged to shift product portfolios to promote new and reformulated child-oriented foods and beverages that are substantially lower in total calories, fats, salt, and added sugars, and higher in nutrient content. This should be informed by research about which products are favored by children, and in particular, by children at high risk for obesity.
- Restaurants should be encouraged to expand and actively promote healthier food, beverage, and meal options for children, and be attentive to the effects of plate and portion size, as noted in Chapter II.

Benchmarks of Success

Increase new product introductions that are consistent with dietary recommendations and substantially lower in total calories, fat, salt, and added sugars. Proprietary data sources can be used to monitor the number and percent of annual product introductions with healthier formulations, such as low fat, no trans fat, low or no sodium, low or no sugar, added calcium, or reduced calories per serving. Over time, it should be possible to monitor consumer purchases of these new product introductions to determine whether they have become a larger share of purchases and intake, using commercial data.

D. Hunger and Obesity

In 2008, approximately 49 million people, including 17 million children, live in households struggling to put enough food on the table. In over 500,000 households, children skipped meals or ate less than needed because of lack of resources.[239] Scholars are increasingly discussing the possible correlation between weight status and food insecurity. This association seems paradoxical, since food insecurity results from inadequate resources to purchase enough food and obesity is a consequence of consuming too much. Still, a number of studies have suggested a possible correlation between food insecurity and obesity, especially in women.[240]

This relationship may exist because the low cost of nutrient-poor, energy-dense foods promotes over-consumption of calories, leading to weight gain. To maintain adequate energy intake, people who must limit food costs may select lower-quality diets, consisting of high-energy, inexpensive foods. People eat fewer fruits and vegetables as food insecurity worsens. Food insecurity may also lead to various psychological and behavioral changes, such as a preoccupation with food, stress, depression, and physical limitations in adults—all of which can lead to an increased risk for obesity. In addition, because many food-insecure households receive assistance from one or more Federal nutrition assistance programs, it is important to consider whether these programs contribute to the obesity/food insecurity paradox, or help solve the paradox by providing access to healthier food, incentives for healthier choices, and effective nutrition education.

USDA administers 15 Federal nutrition assistance programs as our Nation's first line of defense against hunger, including those mentioned above—the Supplemental Nutrition Assistance Program (SNAP, formerly food stamps), the National School Lunch Program (NSLP), the School Breakfast Program (SBP), and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The Federal government will invest more than $80 billion in the national nutrition safety net in fiscal year 2010, subsidizing meals and food purchases for more than 1 in 4 Americans. One-half of all children will participate in SNAP alone at some point during their childhood, including 90% of Arican-American children.[241]

Given these programs' extensive reach, it is important that they be part of the solution to childhood obesity. Data from the National Health and Nutrition Examination Survey show that generally there are more similarities than differences in the nutrient intakes, diet quality, and food choices of program participants compared to the rest of the American population.[242] A thorough assessment of the research in this field shows that WIC and school lunch and breakfast programs do not contribute to childhood obesity.

It remains important to ensure that those who are eligible for and in need of assistance have ready access to these programs. While these programs serve millions of low-income Americans, some people who need benefits do not participate; over one-third of individuals eligible for SNAP do not participate,[243]and 40% of those eligible for WIC do not participate[244]. They may not be aware they are eligible, may not realize the size and value of benefits, or may find applying difficult or burdensome. Similarly, although meal programs exist in thousands of schools across the country, not all eligible children participate in the NSLP, and even fewer participate in the SBP. School lunch is served in around 100,000 schools, while the breakfast program is only available in 88,000 schools and almost two-thirds of children who eat a school lunch do not receive a school breakfast. Some bring healthy food from home, but others, especially in high schools, may forego a nutritious lunch or breakfast entirely.

Is Poor Diet a Low Income Problem?

In general, when one looks at both the food choices and the diet quality of nutrition program participants and other consumers, the similarities are more striking than the differences:

- A recent analysis of nutrition monitoring data (Cole et al., 2008), comparing the diets of participants in SNAP, WIC, and the school meals programs with nonparticipants and higher income consumers show that the diets of all groups fall far short of the *Dietary Guidelines for Americans*. All groups had very low intakes of whole grains, dark green and orange vegetables, and legumes, and high intakes of fat, saturated fat and added sugars.
- With regard to the shopping practices of SNAP participants specifically, consumer expenditure data suggest that they tend to buy the same categories of foods as other consumers. These differences are minor even though families at the high end of the income distribution spend *over twice as much on food at home* as those at the low end.

Nonetheless, some differences do appear to be linked to income:

- In 2003-04, people in low-income families had significantly lower intakes of total vegetables, dark green and orange vegetables and legumes, and whole grains than did higher income families.
- People in low-income families, compared with their counterparts, had lower (i.e. more healthful) intakes of sodium than higher-income families.
- The only significant difference in the quality of *children's* diets by family income, as measured by the Healthy Eating Index, was that low-income children had a higher score for total vegetables. This may reflect low-income children's greater participation in the National School Lunch Program (Guenther et al. 2008).

In general, the critical lesson from this evidence is that while some income-linked factors, such as improved access to healthy options, hold promise to support and influence better diets, almost all Americans, no matter their income need to make significant changes in their eating behaviors to promote good health.

Sources: Cole, N., Fox, M.K. (2008). *Diet Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey.* Washington, DC: Abt Associates, Inc.; Guenther, P.M., Juan, W., Mark, L., Hiza, H.A., Fugwe, T., Lucas, R. (2008). Diet Quality of Low-Income and Higher Income Americans in 2003-04 as Measured by the Healthy Eating Index-2005. *Nutrition Insight, 42.*

Recommendations

Recommendation 4.11: Increase participation rates in USDA nutrition assistance programs through creative outreach and improved customer service, state adoption of improved policy options and technology systems, and effective practices to ensure ready access to nutrition assistance program benefits, especially for children. Improved policies and effective practices include streamlined and more timely application process, greater use of broad-based categorical eligibility and direct certification, and reductions of barriers to participation such as finger imaging. Access to feeding programs for children throughout the year can also be expanded by engaging state, local, Tribal, community leaders, and partnerships with allied organizations, advocacy groups, and communities.

Benchmarks of Success

Increase participation among people eligible for SNAP benefits to 75% by 2015. USDA estimates annual participation rates based on the Annual Social and Economic Supplement to the Current Population Survey and administrative data on SNAP participants. The SNAP participation rate was 65.8% in 2007.

Increase National School Lunch Program participation by 2 million additional children (up to 60% of all students) and School Breakfast Program participation by 3 million additional children (up to 25% of all students) by 2015. USDA monitors participation in the school meal programs through periodic reporting by State administering agencies; information on school enrollments is available annually from the U.S. Department of Education. In 2009, 56% of enrolled students participated in lunch and 20% participated in breakfast.

Key Questions for Future Research

Making research in this area a priority may help to identify the relationship between access and consumption of healthy foods, as well as the causal links between access and diet related health outcomes. Key issues to address with future research investments include:

- The definition, measurement, and consequences of food deserts on food access, diet, and weight outcomes;
- The impact of improved access on dietary quality and obesity rates;
- How agricultural policy may affect food prices and obesity rates;
- The comparative efficacy of sales taxes and price subsidies on weight outcomes; and
- The effectiveness of price incentives, including supplements that increase the value of farmers' market purchases or incentives to promote the purchase of fruits, vegetables, and other healthful foods, especially for low-income populations;

In addition, there is need for tools proven to help communities assess their progress in helping residents eat healthy foods, increase their knowledge of potential steps to promote healthy eating and good nutrition among community residents, as well as identify and define influential actions. This includes tools that connect to and use existing databases (such those that track which products are being sold at grocery stores, through UPC codes) to help communities, industry, and policymakers assess progress in shifting toward increased consumption of healthy foods.

Finally, focusing investments in food technologies, research, and development may help to identify and produce new and reformulated child-oriented foods and beverages that are substantially lower in total calories, fats, salt, and added sugars.

V. Increasing Physical Activity

Physical activity is an essential component of a healthy lifestyle. In combination with healthy eating, it can help prevent a range of chronic diseases, including heart disease, cancer, and stroke, the three leading causes of death.[245] Risk factors for these diseases can begin early in life and be mitigated early in life by adopting regular physical activity habits. Physical activity helps control weight, builds lean muscle, reduces fat, and contributes to a healthy functioning cardiovascular system, hormonal regulatory system, and immune system; promotes strong bone, muscle and joint development; and decreases the risk of obesity.[246] Research has also found that physical activity is related to improvements in mental health, helping to relieve symptoms of depression and anxiety and increase self-esteem.[247] In addition, some studies show that physical activity is correlated with improved academic achievement.[248]

Physical Activity Guidelines for Children and Adolescents

Children and adolescents should get 60 minutes (1 hour) or more of physical activity daily.

- **Moderate- or vigorous-intensity aerobic** physical activity (such as running, hopping, skipping, jumping rope, swimming, dancing, and bicycling) should comprise most of the 60 or more minutes a day. Vigorous-intensity physical activity should be included at least 3 days a week.
- **Muscle-strengthening** physical activity (such as playing on playground equipment, climbing trees, playing tug-of-war, lifting weights, or working with resistance bands) should be included at least 3 days of the week.
- **Bone-strengthening** physical activity (such as running, jumping rope, basketball, tennis, and hopscotch) should be included at least 3 days of the week.

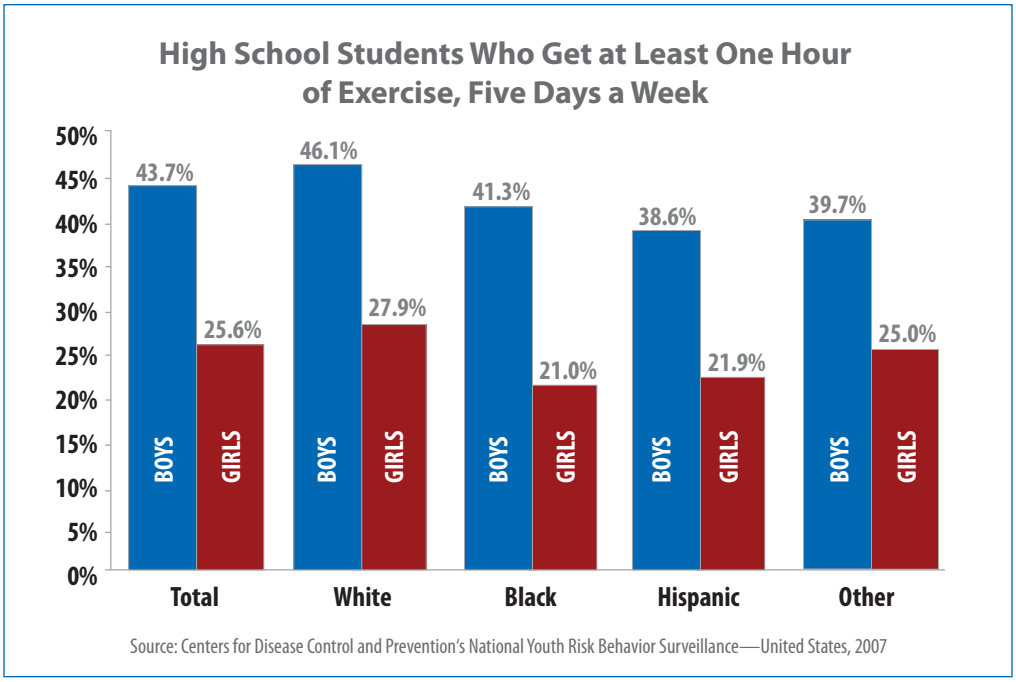
Young people should be encouraged to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety. For more information, see http://www.health.gov/paguidelines/.

According to the *Physical Activity Guidelines for Americans*, children and adolescents should participate in physical activity for at least 60 minutes every day.[249] The Physical Activity Guidelines, developed in 2008 by a committee of experts convened by the U.S. Department of Health and Human Services, provide science-based guidance for Americans ages six and older. They recommend that children's activity time include moderate to vigorous aerobic activity, muscle strengthening, and bone-strengthening exercises, and that young people should be encouraged to participate in age-appropriate, enjoyable, and diverse activities. There are many examples of physical activity, including not only team sports but also walking, biking, swimming, hiking, dancing, gardening, and many other group or individual activities. Recreational activities enjoyable to youth help ensure that they continue to engage in those activities. For example, a survey of Americans who participated in an outdoor activity found that 90% of them began doing so between the ages of five and 18.[250] Outdoor activities can be enjoyed in a variety of locations and are often less expensive, more accessible, and can foster life-long activity.

Children should have several opportunities to be active throughout the week and year round. Activity should be a normal part of a child's day, from walking or biking to and from school, where appropriate, to participating in a physical education class, to engaging in active games during recess, after school, or in the summer at home, in a park, or on a playground. All children benefit and gain enjoyment from physical activity, regardless of ability or disability status, gender, or athletic inclinations and talents. The benefits of physical activity extend beyond childhood too—young people who grow up physically active are more likely to be active adults.[251]

Young people who believe they are competent and have the skills to be physically active are more likely to be active.[252] Likewise, young people who feel supported by friends and families or are surrounded by others interested in physical activity, are more likely to participate in both structured and non-structured activities.[253] These social norms are powerful in determining people's actions.

Unfortunately, our young people live in a social and physical environment that makes it easy to be sedentary and inconvenient to be active. Social and environmental factors that discourage physical activity include: community design centered around automobiles, limited access to low or no cost physical activity close to home (such as parks, recreation centers, and walking and biking paths); new technology that is sedentary in nature; and increased concerns about safety in neighborhoods. The results are startling. Fewer than one in five high school students meet the current recommendations of 60 minutes of daily physical activity,[254] and a recent study showed that adolescents now spend more than seven hours per day watching television, DVDs, movies, or using a computer or a mobile device like a cell phone or MP3 player.[255] Older adolescents are less likely than younger children to be physically active, and adolescent girls are less likely to be physically active than their male peers.[256] African-American and Hispanic adolescent girls are the least likely to be physically active.



Source: Centers for Disease Control and Prevention's National Youth Risk Behavior Surveillance—United States, 2007

There are added barriers for vulnerable populations to become more physically active. Research shows that children with physical, sensory, and cognitive disabilities have substantially greater difficulty participating in regular physical activity, compared with the general population. A recent study showed that youth with physical disabilities had a 4.5 times higher rate of physical inactivity compared to youth without a disability, and they were twice as likely to report watching television for more than four hours per day.[257] Children with physical and developmental disabilities are significantly more likely to be obese or overweight compared with peers without disabilities of the same age.[258] However, there is growing awareness that many activity and health disparities reported among children and adults with disabilities are not necessarily a direct result of the disability, but rather a result of the challenges these individuals face in accessing community services and programs. Such challenges include poor accessibility of facilities, services, and programs, as well as environmental barriers such as lack of accessible equipment or transportation. To overcome these barriers and reduce disparities in physical activity, public schools must ensure that services, supports, and programs, including health and physical education programs, are equally accessible to eligible students with disabilities as to those without disabilities, pursuant to the Individuals with Disabilities Education Act (IDEA) and Title II of the Americans with Disabilities Act (ADA).[259] Many children who do not attend school or live in traditional community settings, such as those in juvenile detention and correctional centers, also have fewer opportunities for physical activity and consequently are less active.[260]

Community Resources for Engaging Young People with Disabilities in Physical Activity

BlazeSports America is a direct legacy of the 1996 Paralympic Games held in Atlanta, Georgia.This organization, with school and community programs in all states, includes sports, camps, and athletic competitions that seek to increase independence, improve health, and enhance overall quality of life for youth and adults with physical disabilities. The organization provides support and toolkits for schools and communities to help develop comprehensive programs and create opportunities for including students with disabilities in athletics and physical activity, including an equipment loan program. With programs geared for individuals throughout the lifespan, BlazeSports provides programs and services that moves children and youth through a continuum, starting with lessons on active play and teaching lessons on being active for life. More information on BlazeSports America can be found at: http://www.blazesports.org.

Another nonprofit organization, the National Center for Physical Activity and Disability, offers a searchable database of programs by geographic region for students with disabilities at: http://www.ncpad.org/programs/index-title.php?letter=A.

Much of the existing research suggests that coordinated, multi-component programs and policies are necessary to effectively change social norms, environments, and behaviors.[261] As part of a comprehensive approach to encourage young people to be more active, schools and communities should be encouraged to adopt common and consistent policies, practices, and expectations regarding these goals. They should also provide opportunities for healthy lifestyle choices in all childhood settings before, during, and after school, as well as on weekends, holidays, and school vacations.[262] This requires changes at all levels, including individual changes; choices, attitudes, and behaviors about physical activity; the structure of school days; teaching approaches; the physical environments of communities;

and policy decisions that govern our way of life.[263] This chapter details what can be done to increase children's physical activity levels:

- in schools and in activities outside of school;
- in the community with the built environment;
- to improve the accessibility of parks and playgrounds; and
- in indoor and outdoor recreational settings.

A. School-Based Approaches

Schools are a key setting to focus on, given the significant portion of time children spend there. Schools can undertake a combination of strategies and approaches to help children be more active including:

- Creating infrastructure and policies that increase access to and encourage physical activity for all students;
- Collecting valid and reliable data and using analytical tools and systems to understand student needs and fitness levels, and promoting approaches that are effective in changing physical activity behaviors and, ultimately, health outcomes;
- Maintaining strong physical education (PE) programs that engage students in moderate to vigorous physical activity for at least 50% of PE class time;
- Providing a variety of activities and specific skills so that students can be physically active not just during class but throughout the day and year; and
- Providing qualified school professionals who are trained in teaching methods to engage students in PE, including for students who face greater barriers to activity.

Most physical activity for students can be provided through a comprehensive school-based physical activity program. Such a program is anchored in quality PE and complemented by activities before, during, and after school, as well as in recess, other physical activity breaks, intramural and physical activity clubs, interscholastic sports, and walk and bike to school initiatives.[264] These initiatives should not take the place of PE, but should reinforce lessons taught in PE by providing opportunities to practice and apply the skills learned.[265]

The components of a comprehensive physical activity program, as identified by the CDC and the National Association for Sport and Physical Education, are described in more detail below. Although the approach focuses on schools and school-related interventions, many community sectors play a role in design, implementation, or evaluation of these interventions.

Schools are an important setting because of access to young people and the school's influence on behavior, as well as the potential impact physical activity has on learning, cognition, and academic achievement. A recent study conducted by the CDC[266] reviewed all relevant literature on the impact on education-related outcomes of school-based PE, recess, classroom-based physical activity, and extracurricular physical activities. Their analysis found that spending time on these four physical activity

approaches had either a positive effect on academic achievement or, at minimum, did not detract from academic outcomes. Specifically:

- Eleven of the 14 studies on school-based PE showed one or more positive associations between this intervention and indicators of academic performance;
- All eight studies on recess found one or more positive association between recess and indicators of cognition, emotion, and academic behaviors, as well as a positive or no effect on children's attention, concentration, and/or on-task classroom behavior;
- Eight of nine studies on classroom physical activity, either through physical activity breaks or learning activities designed to promote learning through physical activity, found positive associations between these activities and indicators of cognitive and academic behavior; and
- All 19 studies examining the relationship between participation in extracurricular physical activity, including afterschool sports or other afterschool physical activity programs, and academic performance found one or more positive associations.

Some school leaders have expressed concerns that a comprehensive physical activity program is too expensive, particularly during difficult economic times and tight budgets. However, there are many low-cost or no-cost steps that school leaders can take to improve the physical activity environment for all students and to promote student health without compromising academic pursuits.

Policies that Support a Comprehensive Physical Activity Program

Local wellness policies, required by USDA for all school districts participating in a school-based meal program, can be used to create district guidelines that can significantly impact physical activity requirements for students. There are many examples that individual school districts can draw from as they develop or refine their wellness policies. They range from specifying minutes of PE or recess requirements, to restrictions on the use of physical activity as punishment. For example, Michigan provides a model local wellness policy for its school districts, combining a quality PE program with a coordinated school health framework and presenting ideas such as recess before lunch and extra physical activity breaks as a reward instead of food snacks.[267] However, a recent nationwide study that assessed the effectiveness and relative quality of local wellness policies showed that only 18% of policies reviewed addressed recess and most did not address PE. Physical activity was often the weakest component of the wellness policies.[268]

Effective implementation of wellness policies is also critical. For example, a study conducted during the first year of local wellness policy implementation in rural Colorado revealed that policies were poorly or weakly worded, and ultimately, had little to no effect on physical activity. Competing pressures, lack of support and resources, and no monitoring or accountability were cited as reasons for the policies' relative weakness.[269]

Physical Education (PE)

Physical Education (PE) is considered the cornerstone of a school-based comprehensive physical activity program. It provides the basis and opportunity for young people to gain the knowledge and skills needed to maintain physically active lifestyles throughout childhood and into adulthood. A quality PE program can increase student participation in physical activity, increase their physical fitness,[270] and enhance their understanding about the purpose and methods of physical activity.[271] Participation in daily PE is associated with an increased likelihood of participating regularly in moderate to vigorous physical activity.[272]

The evidence strongly supports the correlation between school-based PE and increasing physical activity rates. The Task Force on Community Preventive Services is an independent, non-federal, volunteer body of public health and prevention experts tasked with reviewing evidence for interventions, providing recommendations that promote health, and identifying areas for further research. This group reviewed the literature and found that enhanced, school-based PE is an effective strategy for increasing physical activity among young people.[273]

The National Association for Sport and Physical Education recommends daily PE from kindergarten through grade 12, suggesting 150 minutes per week for elementary schools and 225 minutes per week for secondary schools.[274] Pursuant to their findings, a quality PE program should:

- meet the needs of all students;
- be an enjoyable experience for all students;
- keep students active for most of PE class time;
- teach self-management as well as movement skills; and
- emphasize knowledge and skills for a lifetime of physical activity.[275]

One of the resources available to school districts is the Physical Education Curriculum Analysis Tool (PECAT) issued by the CDC, which helps school districts conduct an analysis of their PE curriculum, based on national standards but with an option to customize to include local standards.

Effective school-based PE programs must also take into consideration children who are obese or who have physical or cognitive disabilities, chronic diseases (such as diabetes or asthma), or low levels of fitness. These children may need instruction in PE and physical activity programs to develop motor skills, improve physical fitness, and experience enjoyment and success. Nationwide, 62% of schools had students with long-term physical or cognitive disabilities or chronic diseases. Often, young people who have disabilities or chronic health conditions are discouraged from participating in PE class and other forms of physical activity. For example, among schools with students with physical disabilities, 59% allowed these students to be exempt from enrolling in PE.[276]

Influencing students' attitudes towards and perceptions of physical activity may affect their involvement in physical activity outside of PE class.[277] Physical education should encourage students to view physical activity as important and enjoyable. Increasing students' confidence in their ability to engage in physical activity increases the likelihood of enjoyment and therefore, the likelihood of regular par-

ticipation in physical activity.[278] Students are more likely to have positive attitudes towards physical activity if their needs and interests are met through a variety of activities. They should also understand the many benefits of physical activity, and should be able to apply their newly acquired skills through various opportunities.

Outdoor Education through the Department of the Interior

Another strategy for getting kids physically active is to involve them in environmental education programs that involve outdoor activity. Interpretive programs and alternative PE lessons involving activities such as hiking, biking, wildlife watching, and kayaking can make outdoor education good for the body and brain, and at the same time, enhance young Americans' exposure to and appreciation of our nation's cultural, historic, and environmental resources. Additionally, the Fish and Wildlife Service and the National Park Service offer curriculum-based teacher training by field stations to classroom teachers and other educators to prepare their students for field trips to national parks, wildlife refuges, fish hatcheries, and other public lands. However, more can be done on the national level to encourage outdoor education on public lands as part of school-based curriculum. These programs also facilitate healthier lifestyles by emphasizing indoor and outdoor activity and exercise.

Another option for engaging students is to incorporate interesting PE lessons that make use of the natural environment. Outdoor education has an added advantage because students who become accustomed to outdoor activity are more likely to be active.[279] Depending on the climate, lessons can include activities as varied as hiking, canoeing, and snowshoeing.

Despite the evidence supporting PE, due to budget pressures and other factors, fewer than one in six schools require at least three days a week of PE for the entire school year for all grades in the school. Only 4% of elementary schools, 8% of middle schools, and 2% of high schools provide daily PE or its equivalent for the entire school year for all students.[280] While most middle schools and high schools require PE, 12% of middle schools and 25% of high schools allow students to be exempt from PE requirements because of participation in school sports. 14% of these middle schools and 20% of these high schools allow students to be exempt from PE for participation in school activities other than sports such as band or chorus.

For many schools, the barriers to incorporating PE during the school day include lack of time and resources, such as trained staff, and competing priorities. As noted above, research has shown that allowing students to participate in PE does not detract from academics[281] but rather may enhance academic achievement.[282]

Some states and school districts already require daily PE for students. Like local wellness policies though, unless these requirements are followed, they may not yield the intended results. In Florida, for example, the legislature enacted a requirement for 30 minutes of PE for elementary schools and daily PE for middle school students beginning in the 2009-10 school year. Some reports on the effects of this policy show that school districts struggle to fully fund daily PE and classes are often too crowded to accommodate all students and meet the requirement.[283]

The Promise of Technology

Innovative and engaging teaching methods can motivate students to participate in PE, particularly those students who are not natural athletes or who do not enjoy "traditional PE." Some students have been motivated by the use of technology in the PE classroom that enhances individual skills and teaches students how to monitor their own fitness levels. Examples of technologies that have been incorporated into PE classrooms in recent years include heart rate monitors and equipment that combines activity with video or television-enabled games.

The promise of technology is still uncertain, however. Small, initial studies of these types of "exergaming" technologies suggest that these activities can help engage students who would not otherwise engage in activity and may burn more calories than being sedentary, but there are no studies yet showing a long-term effect on changing physical activity behaviors or on the overall impact on weight loss or children's health. Additionally, these technologies can be prohibitively expensive for school districts to buy and maintain.

Challenges and assessments can also be used to educate children and get them excited about being active. The President's Challenge (originally established in 1966 as the Presidential Physical Fitness Award) was created at the recommendation of the President's Council on Physical Fitness and Sports as a free, publicly-available tool intended both for assessment and engagement of children in fitness-enhancing activity. The Challenge has long provided fitness benchmarks for young people by means of a fitness test. However, the data that are used to classify young people into the three award categories are based on a nationwide sampling that may no longer be relevant, given the increased prevalence of overweight and obesity. While the original Challenge program focused primarily on measures of athletic performance, it has been expanded to include physical activity, in the form of the President's Council also administers the Presidential Active Lifestyle Award (PALA). PALA helps children and adults build healthy habits by committing to regular physical activity five days a week for six weeks. The First Lady's *Let's Move!* campaign has set a goal of doubling the number of children in the 2010-11 school year who earn a PALA award.

Recess for Elementary School Students, Physical Activity Breaks for Older Students

Regularly scheduled recess periods provide another opportunity for children to get part of their recommended 60 minutes of daily physical activity.[284] Recess allows children to apply skills learned in PE (such as decision making, cooperation, conflict resolution, and continued motor skill development).[285] It should not, however, replace PE or be used to meet time requirements set in PE policies. Recess also can provide the opportunity for children to enhance cooperation and negotiation skills, as well as improve attentiveness, concentration, and time-on-task in the classroom.[286] In addition, if recess is scheduled before lunch, students are likely to eat more food, including healthier foods, helping schools meet other desirable goals as well.[287]

Nearly all elementary schools provide regularly scheduled recess for students in at least one grade, but 26% of all elementary schools do not provide regularly scheduled recess for students in all grades.[288] The average length of recess was slightly less than 30 minutes, with more minutes offered for younger students. However, schools with more students from low-income families are even less likely to offer recess to students.[289]

Incorporating Movement into Curriculum and Classroom Activities

Schools can offer students breaks for movement during the school day, such as an extra few minutes for students to stretch before the beginning of a class, or integrating activity and movement into lessons. Some schools might offer physical activity in the classroom as part of planned lessons that teach mathematics, language arts, and other academic subjects through movement. These types of activities contribute to students' accumulated physical activity during the school day.[290] In addition to promoting good health, physical activity within the regular classroom can enhance on-task classroom behavior of students[291] and establish a school environment that promotes regular physical activity.

Recommendations

Recommendation 5.1: Developers of local school wellness policies should be encouraged to include strong physical activity components, on par with nutrition components.

Recommendation 5.2: The President's Challenge should be updated to ensure consistency with the Physical Activity Guidelines for Americans and to ensure ease of use and implementation by schools. Private sector partners with an interest in physical activity should help enroll children in the Presidential Active Lifestyle Award program.

Recommendation 5.3: State and local educational agencies should be encouraged to increase the quality and frequency of sequential, age- and developmentally- appropriate physical education for all students, taught by certified PE teachers. Promising strategies include:

- Research-based curriculum and instructional methods that engage students in moderate to vigorous physical activity for at least 50% of PE class time;
- Instruction in a variety of lifetime fitness activities such as walking, hiking, snowshoeing, rock climbing, water sports, and biking as alternatives to team sports, which can also engage students in long-term outdoor recreation activities while helping to teach principles of activity.
- Partnership with private companies that support local educational agencies through the purchase of necessary equipment for PE classes.

Recommendation 5.4: State and local educational agencies should be encouraged to promote recess for elementary students and physical activity breaks for older students, and provide support to schools to implement recess in a healthy way that promotes physical activity and social skill development. Developers of teacher preparation programs should be encouraged to provide instruction on recess management and activity breaks for students. These can include in-service training to teachers and school professionals on actively engaging students, managing recess, and providing supervision during physical activity breaks, if appropriate.

Recommendation 5.5: State and local educational agencies should be encouraged to provide opportunities in and outside of school for students at increased risk for physical inactivity, including children with disabilities, children with asthma and other chronic diseases, and girls. For example, local educational agencies, schools, and teachers should include considerations for ensuring physical activity for students with disabilities in their Individualized Education Plans, pursuant to the IDEA and/or the ADA; State and local educational agencies should be encouraged to follow the National Guidelines for Managing Asthma at Schools;[292] and Title IX should be maintained and enforced to ensure gender equity.

Benchmarks of Success

Increase the number of high school students who participate in daily PE classes to 40% by 2015 and 50% by 2030. Currently, roughly 30% of high school students attend daily PE classes, a rate that has been relatively stable since about 1993. This data can be tracked using the national Youth Risk Behavior Survey. Note that while the quality of PE classes cannot be tracked with current survey instruments, the goal is to increase both quantity and quality. Similar progress for elementary students should be made, and can be tracked if data becomes available.

Increase the percentage of schools that offer recess to all students and grades in elementary schools to 95% in 2015. As of 2006, only 79% of schools offered recess to all of these students. Data are collected every six years through the CDC's School Health Policies and Practices Survey (SHPPS). The most recent SHPPS data is for 2006; the next study will be done in 2012 and released in 2013.

As noted earlier in this report, it will be critically important to monitor the overall increase in children's level of aerobic physical activity and muscle-strengthening activity. An enhanced NHANES survey may provide additional data on younger children's physical activity levels across the U.S. Additionally, the revamped President's Challenge tool may offer children, families, and teachers an understanding of how their physical activity performance has improved over time.

B. Expanded Day and Afterschool Activities

Expanded day and afterschool programs also offer schools an opportunity to collaborate with community partners to provide programming to many students. These programs can provide additional opportunities for learning, safe environments for students, and enrichment activities that integrate lessons about healthy living and additional opportunities for students to be active. Expanded day and afterschool activities can appeal to a variety of students' interests, ranging from instruction in such subjects as art and nutrition to engagement in intramural sports and non-competitive lifetime physical activities.

In the school setting, schools may rethink the length and structure of the school day and year, so students have the time they need to succeed, including through activities to improve their physical health, and teachers have the time they need to collaborate and improve their practice. While many of these schools have implemented an expanded day only recently, initial evidence suggests a positive relationship between expanded time programs and academic performance.[293] Research supports the effectiveness of well designed programs that expand learning time by a minimum of 300 hours per school year.[294] Research also demonstrates that students that participate in evidence-based afterschool programs improved participants social and personal skills, as well as academic achievement.[295]

The Expanded Learning Time Model in Massachusetts

Twenty-two schools in Massachusetts have received grants to adopt an expanding learning time model (ELT) and have incorporated more time for such activities through a variety of strategies including adding and/or expanding physical education classes; adding and/or expanding recess; and adding new health and fitness electives. These schools have also initiated a range of community partnerships with entities such as YMCAs, Boys & Girls Clubs, and community centers to connect youth in these schools to the organizations' staff and facilities.

For example, three middle schools in Boston that offer ELT offer a menu of health and fitness electives led by teachers and community partners, including a running club, step team, and competitive basketball, football, volleyball, and dance teams. The schools have established partnerships with the Boston Ballet to offer dance, partner with the Charlestown Community Center and Boston Centers for Youth and Families to offer swimming, and offer break-dancing in partnership with the Bird Street Community Center.

Other activities during the after-school hours can enhance physical activity, including intramural sports and lifetime activities. The National Association for Sport and Physical Education has outlined three characteristics that describe the positive attributes of intramural sports programs: (1) students have a choice of activities or participation; (2) every student is given equal opportunity to participate regardless of ability level; and (3) students have the opportunity to be involved with the planning and implementation of activities.[296] Intramurals can offer students an opportunity to experiment and participate in new activities without having to try out for a team or playing in a high-pressure environment. Almost half of all schools in 2006 offered intramural programs.[297] Some intramural sports programs integrate academic content with physical activity or focus primarily on positive youth development, building social competencies, and connectedness between young people and adults. These types of programs, sometimes referred to as "sports-based youth development programs," focus on building students' social and emotional skills, enhancing positive relationships to peers and caring adults, developing youth leadership, and connecting with the broader community, with sports as the basis.

Lifetime physical activities such as walking, running, hiking, swimming, tennis, dancing, and biking can also be fun activities offered by programs and schools, including after-school programs.[298] Activities should provide opportunities for girls and boys; meet the needs of students at all levels of skills and physical abilities, particularly those that are not athletically gifted; and reflect student interest. Programs may combine these activities with other initiatives, such as community service or service learning programs that engage students in meaningful community work. And if schools do not go year around, many of the same program models could be used to increase physical activity in the summer.

The U.S. Department of Education's 21st Century Community Learning Centers Program provides support for afterschool activities to students. The latest U.S. Department of Education data show that the centers served about 1.5 million students in 2008 in almost 10,000 sites and received over $1 billion in FY 2010. While the vast majority of the programs (9 out of 10) operated in schools, school districts were only directly responsible for administering approximately 60% of the programs. The remaining 40% were administered by community-based organizations and other eligible entities, including institutions of higher education, nationally-affiliated non-profit organizations, and for-profit organizations.

Soccer as a Building Block for Learning

America SCORES is an after-school program that combines soccer, creative writing, and service learning. With affiliates across the country, a pilot study of the America SCORES Bay Area in San Francisco showed that participants in the program had statistically significant lowering of BMI. An unpublished national evaluation showed also showed that participants had an increased level of physical activity, increased reporting of feelings of self-confidence, self-efficacy, and enjoyment in learning, increased reporting of reading enjoyment and longer time reading independently, and gains in writing achievement.

Sources: Madsen K, Thompson H, Wlasiuk L, Queliza E, Schmidt C, Newman T.(2009).After-school program to reduce obesity in minority children: A pilot Study. *Journal of Child Health Care,13*, 333; America SCORES Works.(n.d.). Retrieved from: http://www.americascores.org/#/national/program/184.

The Administration's Blueprint to reauthorize the Elementary and Secondary Education Act proposes to reform and strengthen 21st Century Community Learning Centers Program by incorporating approaches that better integrate community involvement and comprehensively redesign and expand the school day. In addition to providing additional time for academic work, programs would also explicitly focus on providing enrichment activities, including those that improve mental and physical health, opportunities for experiential learning, and greater chances for families to actively engage in their children's education.

Physical activity programs at the local level are often offered by a variety of providers, including park and recreation departments within local government, faith-based entities, or community centers like the YMCA or Boys and Girls Clubs. These outside partners can be of particular help in bringing in expertise and experience that might not always exist in schools or districts. Partnerships with parents and community-based organizations may increase the availability and quality of these programs, as well as the time students spend in physical activity.[299] They can also provide additional resources and supports.

In under-resourced communities, schools can provide the physical structure for after school, weekend, and summer programming. Community partners, with the support of local businesses or industry, can provide the personnel, programming, and support for activities. Some programs prefer to maintain relationships without formal agreements, while many others use more formalized agreements to delineate terms of the arrangement. Known as joint use agreements,[300] these arrangements can maximize the school facility and allow students to access playgrounds, gymnasiums, basketball courts, pools, or fields before and after school hours. In practice, these joint use agreements are also forged between schools and non-governmental entities, and include conditions and considerations for liability, a concern often cited by schools. A recent study showed that when a school ground was opened to children, not only were more children active as compared to a similar community, they also reported declines in watching television, DVDs, and movies, as well as playing video games on weekdays.[301]

All students, regardless of gender, race or ethnicity, health status, physical, sensory, or cognitive disability, should have access to physical activity programs. Physical activity programs that overemphasize team sports and do not emphasize lifetime physical activities can exclude potential participants.[302] As noted above in the discussion of PE, effective programs must also take into consideration children who are obese or who have physical or cognitive disabilities, chronic diseases (such as diabetes or asthma), or low levels of fitness. These children may need instruction to develop motor skills, improve physical fitness, and experience enjoyment and success.

Interscholastic Sports

Not surprisingly, participation in sports has been associated with higher levels of participation in overall physical activity.[303] One study suggested that adolescent participation in sports decreases cardiovascular risk factors, particularly for older adolescents.[304] Additionally, participation in sports programs has been associated with improved mental health and a reduction in risky health behaviors.[305] Girls in particular seem to benefit most from team sport participation; two recent studies suggested that girls who participated in athletics were healthier and had improved academic and career outcomes as adults.[306] Nationwide, 77% of middle schools and 91% of high schools offered interscholastic sports programs in 2006;[307] in 2007, 56% of high school students reported that they had played on at least one sports teams run by their school or a community group.[308] With the economic challenges facing school districts over the last few years, some administrators have cut or considered cutting team sports. Some research suggests that as much as $2 billion was cut from youth sport program budgets nationwide in 2008.[309] Other school districts have instituted "pay-to-play," which requires students to pay a fee to play on a sport team. According to a recent assessment by the National Federation of State High School Associations, 33 states have schools with pay-to-play programs.[310] A recent study showed that fees up to $100 cause a 10% decrease in participation, while fees up to $200 cause a 20% decline.[311] Costs can vary dramatically depending on the school district; in some districts, the price is capped and in others, participation is expensive. For example, in one district, it can cost as much as $282 to run cross-country, $508 to play field hockey, and $969 to play football.[312] For some students, particularly low-income students, this fee is impossible to pay and excludes students from engaging in sports.

Recommendations

Recommendation 5.6: Federal, state, and local educational agencies, in partnership with communities and businesses, should work to support programs to extend the school day, including afterschool programs, which offer and enhance physical activity opportunities in their programs.

- Districts, schools, local government, community-based organizations, and local businesses should partner together to create or enhance expanded day and afterschool programs that incorporate physical activity.
- Support should be provided to expand participation in intramural sports programs and non-competitive physical activity clubs that appeal to students who are not athletically gifted.
- Entities that accredit afterschool programs should include guidelines for incorporating age- and developmentally-appropriate physical activity in accreditation standards.
- State and local educational agencies should explore and execute joint use agreements to secure school facilities for out-of-school time activities and provide age- and developmentally-appropriate programming for students.

- The Federal government should support state, local educational agencies, and nonprofit organizations by providing resources, including funding and technical assistance, to promote high quality after school programs and programs that comprehensively redesign and expand the school schedule for all students, and full-service community schools through the 21st Century Community Learning Centers program. Technical assistance should also focus on innovative methods that ensure inclusive opportunities to promote physical activity for students with disabilities, as well as strengthening partnerships.

Recommendation 5.7: State and local educational agencies should be encouraged to support interscholastic sports and help decrease prohibitive costs of sports by curbing practices such as "pay-to-play," working with other public and private sector partners.

- The Federal government should continue to support programs, such as those sponsored by the Corporation for National and Community Service, that train and develop more qualified coaches for intramural sports teams and programs, and should collaborate with state, and local governments, nonprofits, philanthropies, and private sector partners to ensure that these programs are more widespread.
- State and local governments should consider strategies to make facilities and coaches more available for local youth sports teams.
- College and university sports teams should engage K-12 teams to increase opportunities for young people to learn about sports and receive coaching, and local sports figures and businesses should become more involved in supporting or sponsoring K-12 sports teams.

C. The "Built Environment"

How communities are designed and function can promote—or inhibit—physical activity for children and adults. The built environment consists of all man-made structures, including transportation infrastructure, schools, office buildings, housing, and parks. Children's ability to be physically active in their community depends on whether the community is safe and walkable, with good sidewalks and reasonable distances between destinations.

Research is still emerging on the exact interaction of the built environment and the impact on childhood obesity. Yet, a series of research studies suggests that attributes of our current built environment, such as low density development and sprawl, have had a negative impact on health outcomes, contributing to obesity and related health problems.[313] Several of these studies have found that areas with greater sprawl tend to have higher rates of adult obesity. The combination of greater distances between destinations as development sprawls outward from city centers and the lack of pedestrian and bicycle infrastructure contributes to eliminating walking and biking as options and to increased driving. One-fifth of all automobile trips in urban areas are one mile or less, and over two-fifths of these trips are under three miles,[314] distances easily walked or biked if the proper infrastructure were available. Low-income communities in particular often have a higher number of busy through streets, poor cycling and pedestrian infrastructure, and few high-quality parks and playgrounds—all elements which seem to deter physical activity.[315]

On the other hand, communities that emphasize pedestrian-friendly design have the potential to bring about better health outcomes. Such designs help decrease automobile travel, increase opportunities for physical activity, enhance public safety, and improve air quality, while simultaneously preserving agricultural and other environmentally fragile areas. Research suggests that doubling residential density across a metropolitan area might lower household vehicle miles traveled by about 5 to 12%, and perhaps by as much as 25%, if coupled with other measures.[316]

Creating new walkable, bikable communities can be feasible, but retrofitting the vast majority of existing American communities poses a separate challenge. This includes revitalizing older, traditional neighborhoods, often found in center cities or towns, to make them more viable, active communities. It also includes retrofitting newer sprawling communities to diversify their transportation options, creating a more walkable street grid.

Before undertaking any major new development or planning initiatives, communities may consider completing an assessment of the potential health impacts of the development. For example, Health Impact Assessments (HIAs) describe a combination of procedures, methods, and tools used to judge a policy or project's potential public health effects and the distribution of those effects within the population.[317] HIAs can be used to focus decision-makers' attention on the health consequences of the projects and policies they are considering, particularly how land use decisions may impede or improve physical activity.

The existence of safe, convenient, and accessible facilities for walking and biking are likely to increase physical activity and make parents feel more secure about their children's safety. However, they do not by themselves ensure more active lifestyles for residents of such communities. "Social environments" also play a role, including how community members feel about their neighborhood, how secure they feel, and how interested they are in participating in community-based physical activity. Evidence suggests that the combined effect of the built and social environment has an impact on rates of childhood obesity and overweight. A recent study found that:

- Children living in unsafe neighborhoods or those characterized by poor housing and the presence of garbage and litter on streets had an approximately 30-60% higher chance of being obese or overweight than children living in better conditions.
- Children with low neighborhood amenities or those lacking neighborhood access to sidewalks or walking paths, parks or playgrounds, or recreation or community centers had 20-45% higher odds of becoming obese or overweight compared to children who had access to these amenities.
- The impact of the built environment was particularly strong for younger children (ages 10-11) and for girls. Girls ages 10-11 living in neighborhoods with the fewest amenities had 121-276% higher adjusted odds of being obese or overweight than those living in neighborhoods with the most amenities.[318]

In particular, violence shapes our everyday decisions about where to live, work, go to school, shop for groceries, play, and whether go for a walk in the neighborhood or to a local park. In one study, people who classified their neighborhood as "not at all safe" were three times more likely to be physically inactive during leisure time than those who considered their neighborhood to be "extremely safe."[319] Another study also found that walking habits vary according to an individual's perception of safety and physical surroundings. For example, fear may lead someone to shop at a nearby convenience store, which may only contain unhealthy food, instead of walking further to a farmers market, or a grocery store that has healthy produce options.[320] Effective public safety measures, such as community based anti-crime and anti-gang initiatives, can reduce fear of crime and violence. Where possible, such efforts should be targeted on specific "hot spots" for crime and violence that impede access to parks, playgrounds, and other recreational facilities, as well as routes to healthy eating options.

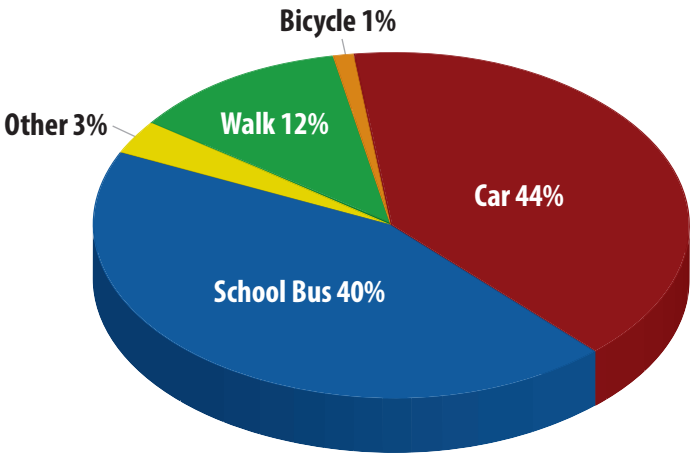
"Active Transport": Safe Routes to School and Beyond

Active transport refers to approaches that encourage individuals to actively travel between their destinations throughout the day, such as by biking or walking. Children who walk or bike to school report being more physically active, including engaging in more moderate to vigorous physical activity, than those who travel by car, bus, or train.[321]

Programs like Safe Routes to Schools (SRTS), funded by the U.S. Department of Transportation (DOT), have proven an effective way to get students safely walking and biking to school. Serving students in grades K-8, the SRTS program supports capital investments, such as building sidewalks, crosswalks, creating better community designs, and providing other supports for active transport. Nearly 6,500 schools are participating in the federal SRTS program, which has provided $612 million for this purpose since 2005. SRTS helped and continues to help increase the number of students walking to school[322] and decrease those being driven to school.[323] A study of SRTS sites in California showed a 38% increase in students walking to school.[324]

Even without dedicated funding, some communities have found creative ways to make safe passages for young people between homes and neighborhoods, schools, and after school activities. For elementary students, the "walking school bus" has been a successful model, in which adults walk to school with a group of students. For older students, creative partnerships with police departments have helped students travel between school and afterschool activities safely in some communities.

Still, in 2009, only 13% of students rode a bike or walked to school, down from 44% in 1969.[325] Similarly, the percentage of students riding a school bus has also declined and more students report coming to school by personal vehicle than other methods.[326] Parents cite many barriers to "active transport," commonly referencing distance to school, traffic-related danger, and weather. In the same survey, 12% of parents cited fear of crime as a barrier. Six percent of parents also cited school policies that prohibit walking and biking to school as the reason their children did not walk or bike to school.[327] Bike and pedestrian safety is a real concern as well. In 2007, 14,000 children were injured and 300 killed by cars. There is a "safety in numbers" trend, in which roadways generally become safer for everyone when more people are out walking and biking.[328]



Source: U.S. Department of Transportation, Federal Highway Administration Office of Policy, National Household Travel Survey, 2009.

Recommendations

Recommendation 5.8: Reauthorize a Surface Transportation Act that enhances livability and physical activity. A complete network of safe bicycle and pedestrian facilities would allow children to take more trips through active transportation and get more physical activity. New Federal aid construction projects should accommodate bicyclists and pedestrians by incorporating "Complete Streets" principles. As improvement projects for existing facilities are undertaken, transportation infrastructure should be retrofitted, where feasible, to support and encourage bicycle and pedestrian use. State and local money can also be leveraged to support safe facilities for children to walk or bike to places like parks, playgrounds, transit, and community centers. The reauthorization could adopt Complete Streets principles that would include routine accommodation of walkers and bicyclists for new construction, to influence retrofitting of existing communities, and to support public transportation. In addition, it could enhance authority for recreational areas on public lands.

Recommendation 5.9: The Environmental Protection Agency should assist school districts that may be interested in siting guidelines for new schools that consider the promotion of physical activity, including whether students will be able to walk or bike to school.

Recommendation 5.10: Communities should be encouraged to consider the impacts of built environment policies and regulations on human health. Local communities should consider integrating Health Impact Assessments (HIAs) into local decision-making processes, and the Federal government should continue to support the development of an HIA approach, tools, and supporting resources that promote best practices.

Recommendation 5.11: The Federal Safe Routes to School Program (SRTS) should be continued and enhanced to accommodate the growing interest in implementing Safe Routes to Schools plans in communities. This can be facilitated by:

- Continuing aspects of current law, including requiring that every State maintain a full-time SRTS Coordinator, spending funds on both infrastructure projects and non-infrastructure activities, and continuing to operate the National Clearinghouse.
- Continuing Federal investments to increase opportunities for SRTS participation.
- Streamlining Federal requirements and reducing administrative burden for grants management to fit with the unique nature of SRTS projects and programs.
- Expanding funding eligibility to cover kindergarten through 12th grade.
- Developing improved surveillance and validated measures for tracking participation in SRTS and its impacts.

Recommendation 5.12: "Active transport" should be encouraged between homes, schools, and community destinations for afterschool activities, including to and from parks, libraries, transit, bus stops, and recreation centers.

Benchmarks of Success

Increase by 50% by 2015 the percentage of children ages 5-18 taking safe walking and biking trips to and from school. An increase of 50% would mean that 19.5% of school trips would be by biking or walking. This data is available from the National Household Travel Survey, which is conducted every five to seven years, so there may be a delay in this data becoming available.

D. Community Recreation Venues

Parks and Playgrounds

Parks and playgrounds in a community can provide opportunities to run and play and may increase unstructured physical activity.[329] If children can easily access safe parks and playgrounds in good repair, they are more likely to engage in recreational physical activity there.[330]

National, state, and local parks are an ideal environment to be physically active, and increased access to parks is proven to promote physical activity among children[331] and adolescents.[332] In addition to encouraging physical activity, parks and other natural landscapes can provide recreational experiences, opportunities to learn and grow, and places of quiet refuge. The Federal government provides support for state and local conservation and recreation initiatives through the Land and Water Conservation Fund (LWCF) State Assistance Program. The goal of this program is to increase access to a park, a river, or an area of open space close to home. As part of this initiative, funds can be used to enhance and support the further development of parks and playgrounds in communities. Other Federal programs provide funding to States and local entities for park and open space conservation and recreation trails and shared use paths, including HUD's Community Development Block Grant program and DOT's Transportation Enhancement program.

Private, nonprofit organizations and corporations have also supported park and playground development in communities. By engaging in park clean-ups and playground development, businesses can take part in initiatives that contribute to community cohesion and improve access to playgrounds and parks.

Outdoor and Indoor Venues

Outdoor recreation and access to nature play a vital role in the physical, psychological, spiritual well-being, health, and development of people of all ages.[333] The current poor health of many American children today, including increasing levels of obesity-related illnesses,[334] attention deficit- hyperactivity, vitamin D deficiency, and myopia are being attributed, in part, to a generational decline in the level of outdoor recreation in natural environments.

Children's level of physical activity has been shown to increase when they participate in environmental education programs that promote outdoor activity.[335] Children of all ages are healthier, happier, and have better social skills if they have frequent opportunities for free and unstructured play outdoors.[336] For these reasons, children need to be encouraged to connect with the outdoors—places that can promote both physical and emotional health.

Communities still need to ensure adequate and accessible indoor facilities for physical activity. For students who are unable to play outside because of allergies or asthma, particularly during high-pollution days or inclement weather, communities should make sure indoor recreational facilities are available to children. Currently, 65% of schools allow for community use of physical activity or athletic facilities, a strategy that can increase opportunities for indoor activity.[337]

Communities also must ensure that children actually are aware of the opportunities available to them. The Task Force for Community Preventive Services found that informational outreach is essential to maximizing the results of improvements in access to physical activity.[338] In some communities, outreach was unnecessary, but in others, outreach and communications was needed.

Recommendations

Recommendation 5.13: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities. This can be accomplished in part by:

- Targeting LWCF funds to increase use of and access to parks and open space in low-income neighborhoods and communities that receive funding, and by expanding Tribes' access to funding and strengthening their capacity to compete for funding.
- Businesses considering "adopting" (building and/or helping to maintain) parks and playgrounds in their communities.
- Foundations, community and faith-based organizations, and businesses engaging in community planning efforts to ensure their work in developing parks and playgrounds are enhanced and maintained over time, and are supportive of other community initiatives.
- Encourage development or renovation of playgrounds to include less asphalt and more natural terrain, so as to foster unstructured, "natural" play.

Recommendation 5.14: The Federal government should continue to support investments in a wide range of outdoor recreation venues, such as National Parks, Forests, Refuges and other public lands, and expand opportunities for children to enjoy these venues. The U.S. Department of Interior and the National Forest Service maintain hundreds of millions of acres of public land, as well as rivers, parks, and other areas.

- Federal land management agencies should work together along with state, Tribal and local agencies to promote and ensure access to a range of youth-appropriate activities on public lands and waters. This includes transportation to help children get to and from parks and other public lands.
- Federal agencies should work with non profits, corporations, and local youth groups to strengthen partnerships and identify new opportunities for outdoor physical activities, programs, and events.

Recommendation 5.15: Local governments should be encouraged to enter into joint use agreements to increase children's access to community sites for indoor and outdoor recreation.

Recommendation 5.16: The business sector should be encouraged to consider which resources and physical assets like fields and gyms can be used to increase students' access to outdoor and indoor recreational venues. Corporations, for example, may have large grounds that they can make available for children in the community to play soccer or engage in other outdoor activities.

Recommendation 5.17: Entertainment and technology companies should continue to develop new approaches for using technology to engage children in physical activity.

Benchmarks of Success

Increase access to, use of, and the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities. Partial data sources exist in the private sector to measure this, but work will need to be done to develop those sources and measure progress.

Key Questions for Future Research

- What are the teaching methods that best engage students in PE, including the relative benefits of technology in the PE classroom, for achieving long-term behavioral changes in physical activity habits?
- What kinds of outdoor activities for children are most likely to produce lasting increases in physical activity levels? Are the benefits different from indoor physical activity?
- How can we better target physical activity interventions to multiple communities, including diverse ethnic populations and children with disabilities? What are the most effective methods for reaching these populations?
- What are appropriate measurement tools for tracking trends in physical activity?
- Do health impact assessments change health outcomes in communities where they are used?
- What percentage of children lives within walking or biking distance from school or a park entrance?
- Does the built environment increase physical activity rates for children and reduce obesity? If so, what are the mechanisms for this reduction?
- How can the insights of behavioral economics, such as changing the default choice in a given situation, be used to promote physical activity among young people?

Conclusion

Taken together, the strategies and tactics outlined in this report should achieve the goal of solving the problem of childhood obesity within a generation. It will not be easy, and it will take action on all of our parts — parents and teachers, leaders in government and industry, and communities large and small. But at the core of this endeavor is a simple concept we all embrace, which is that children should have good, nutritious food to eat and the chance to be physically active every day, so that they grow up into healthy adults.

The next step is to turn these ideas into action. Many partners stand ready to make this happen, and have already volunteered to be part of this effort by joining the First Lady's *Let's Move!* campaign. Philanthropies will play a critical role in cementing private sector commitments to make concrete steps towards our shared goal, including but not limited to the action steps recommended in this report. And the Federal government must play a leadership role as well. The Task Force on Childhood Obesity and its 12 member agencies stand ready to take up that charge. Every day, approximately 11,000 children are born in America. We owe them our very best effort.

Summary of Recommendations

I. Early Childhood				
Recommendation	**Federal action**	**State or local action**	**Private sector action**	**Page**
Recommendation 1.1: Pregnant women and women planning a pregnancy should be informed of the importance of conceiving at a healthy weight and having a healthy weight gain during pregnancy, based on the relevant recommendations of the Institute of Medicine.	x	x	x	12
Recommendation 1.2: Education and outreach efforts about prenatal care should be enhanced through creative approaches that take into account the latest in technology and communications. Partners in this effort could include companies that develop technology-based communications tools, as well as companies that market products and services to pregnant women or prospective parents.			x	12
Recommendation 1.3: Hospitals and health care providers should use maternity care practices that empower new mothers to breastfeed, such as the Baby-Friendly hospital standards.	x	x	x	16
Recommendation 1.4: Health care providers and insurance companies should provide information to pregnant women and new mothers on breastfeeding, including the availability of educational classes, and connect pregnant women and new mothers to breastfeeding support programs to help them make an informed infant feeding decision	x	x	x	16
Recommendation 1.5: Local health departments and community-based organizations, working with health care providers, insurance companies, and others should develop peer support programs that empower pregnant women and mothers to get the help and support they need from other mothers who have breastfed	x	x	x	16
Recommendation 1.6: Early childhood settings should support breastfeeding	x	x	x	16
Recommendation 1.7: Federal and State agencies conducting health research should prioritize research into the effects of possibly obesogenic chemicals.	x			17

Recommendation 1.8: The AAP guidelines on screen time should be made more available to parents, and young children should be encouraged to spend less time using digital media and more time being physically active.		x	x	18
Recommendation 1.9: The AAP guidelines on screen time should be made more available in early childhood settings.		x	x	18
Recommendation 1.10: The Federal government, incorporating input from health care providers and other stakeholders, should provide clear, actionable guidance to states, providers, and families on how to increase physical activity, improve nutrition, and reduce screen time in early child care settings.	x			21
Recommendation 1.11: States should be encouraged to strengthen licensing standards and Quality Rating and Improvement Systems to support good program practices regarding nutrition, physical activity, and screen time in early education and child care settings		x	x	21
Recommendation 1.12: The Federal government should look for opportunities in all early childhood programs it funds (such as the Child and Adult Care Food Program at USDA, the Child Care and Development Block Grant, Head Start, military child care, and Federal employee child care) to base policies and practices on current scientific evidence related to child nutrition and physical activity, and seek to improve access to these programs	x			21

II. Empowering Parents and Caregivers				
Recommendation	**Federal action**	**State or local action**	**Private sector action**	**Page**
Recommendation 2.1: The Federal government, working with local communities, should disseminate information about the 2010 Dietary Guidelines for Americans through simple, easily actionable messages for consumers and a next generation Food Pyramid.	x			26
Recommendation 2.2: The FDA and USDA's Food Safety and Inspection Service should collaborate with the food and beverage industry to develop and implement a standard system of nutrition labeling for the front of packages	x		x	27
Recommendation 2.3: Restaurants and vending machine operators subject to the new requirement in the Affordable Care Act should be encouraged to begin displaying calorie counts as soon as possible			x	27
Recommendation 2.4: Restaurants should consider their portion sizes, improve children's menus, and make healthy options the default choice whenever possible.			x	27
Recommendation 2.5: The food and beverage industry should extend its self-regulatory program to cover all forms of marketing to children, and food retailers should avoid in-store marketing that promotes unhealthy products to children.			x	32
Recommendation 2.6: All media and entertainment companies should limit the licensing of their popular characters to food and beverage products that are healthy and consistent with science-based nutrition standards			x	32
Recommendation 2.7: The food and beverage industry and the media and entertainment industry should jointly adopt meaningful, uniform nutrition standards for marketing food and beverages to children, as well as a uniform standard for what constitutes marketing to children.			x	32
Recommendation 2.8: Industry should provide technology to help consumers distinguish between advertisements for healthy and unhealthy foods and to limit their children's exposure to unhealthy food advertisements.	x		x	32

Recommendation 2.9: If voluntary efforts to limit the marketing of less healthy foods and beverages to children do not yield substantial results, the FCC could consider revisiting and modernizing rules on commercial time during children's programming	x			32
Recommendation 2.10: Pediatricians should be encouraged to routinely calculate children's BMI and provide information to parents about how to help their children achieve a healthy weight.			x	35
Recommendation 2.11: Federally-funded and private insurance plans should cover services necessary to prevent, assess, and provide care to overweight and obese children.	x		x	35
Recommendation 2.12: Dentists and other oral health care providers should be encouraged to promote healthy habits and counsel families on childhood obesity prevention as part of routine preventive dental care			x	35
Recommendation 2.13: Medical and other health professional schools, health professional associations, and health care systems should ensure that health care providers have the necessary training and education to effectively prevent, diagnose, and treat obese and overweight children			x	35

III. Healthier Food in Schools				
Recommendation	**Federal action**	**State or local action**	**Private sector action**	**Page**
Recommendation 3.1: Update Federal nutritional standards for school meals and improve the nutritional quality of USDA commodities provided to schools.	x			39
Recommendation 3.2: Increase resources for school meals.	x	x	x	40
Recommendation 3.3: USDA should continue its outreach and technical assistance to help provide training for school food service professionals.	x	x	x	40
Recommendation 3.4: Schools should consider upgrading their cafeteria equipment to support the provision of healthier foods, for example, by swapping out deep fryers for salad bars.	x	x	x	41
Recommendation 3.5: USDA should work with all stakeholders to develop innovative ways to encourage students to make healthier choices.	x	x		41
Recommendation 3.6: USDA should work to connect school meals programs to local growers, and use farm-to-school programs, where possible, to incorporate more fresh, appealing food in school meals	x	x	x	41
Recommendation 3.7: Schools should be encouraged to make improvements in their school meal programs through the HealthierUS Schools Challenge in advance of updated Federal standards.	x	x	x	42
Recommendation 3.8: Increase the alignment of foods sold at school, including in the a la carte lines and vending machines, with the Dietary Guidelines.	x			43
Recommendation 3.9: Food companies should be encouraged to develop new products and reformulate existing products so they meet nutritional standards based on the Dietary Guidelines and appeal to children.			x	43
Recommendation 3.10: USDA and the U.S. Department of Education should collaborate with states to increase the availability and consistency of nutrition education in schools.	x	x		44

Recommendation 3.11: Where possible, use school gardens to educate students about healthy eating.		x	x	45
Recommendation 3.12: Technical assistance should be provided to schools about how to a cafeteria and lunch room environment can support and encourage a healthful meal		x		45
Recommendation 3.13: Schools should be encouraged to ensure that choosing a healthy school meal does not have a social cost for a child		x		45
Recommendation 3.14: Schools should be encouraged to consider the impact of food marketing on education.		x	x	45
Recommendation 3.15: School districts should be encouraged to create, post, and implement a strong local school wellness policy.	x	x	x	45
Recommendation 3.16: Promote good nutrition through afterschool programs.	x	x	x	47
Recommendation 3.17: Promote healthy behaviors in juvenile correctional and related facilities.	x	x	x	47

IV. Access to Healthy, Affordable Food				
Recommendation	**Federal action**	**State or local action**	**Private sector action**	**Page**
Recommendation 4.1: Launch a multi-year, multi-agency Healthy Food Financing Initiative to leverage private funds to increase the availability of affordable, healthy foods in underserved urban and rural communities across the country.	x	x	x	53
Recommendation 4.2: Local governments should be encouraged to create incentives to attract supermarkets and grocery stores to underserved neighborhoods and improve transportation routes to healthy food retailers.		x		54
Recommendation 4.3: Food distributors should be encouraged to explore ways to use their existing distribution chains and systems to bring fresh and healthy foods into underserved communities.	x		x	54
Recommendation 4.4: Encourage communities to promote efforts to provide fruits and vegetables in a variety of settings and encourage the establishment and use of direct–to-consumer marketing outlets such as farmers' markets and community supported agriculture subscriptions.		x		54
Recommendation 4.5: Encourage the establishment of regional, city, or county food policy councils to enhance comprehensive food system policy that improve health		x		54
Recommendation 4.6: Encourage publicly and privately-managed facilities that serve children, such as hospitals, afterschool programs, recreation centers, and parks (including national parks) to implement policies and practices, consistent with the Dietary Guidelines, to promote healthy foods and beverages and reduce or eliminate the availability of calorie-dense, nutrient-poor foods	x	x	x	54
Recommendation 4.7: Provide economic incentives to increase production of healthy foods such as fruits, vegetables, and whole grains, as well as create greater access to local and healthy food for consumers.	x			59
Recommendation 4.8: Demonstrate and evaluate the effect of targeted subsidies on purchases of healthy food through nutrition assistance programs.	x			59

Recommendation 4.9: Analyze the effect of state and local sales taxes on less healthy, energy-dense foods	x	x		59
Recommendation 4.10: The food, beverage, and restaurant industries should be encouraged to use their creativity and resources to develop or reformulate more healthful foods for children and young people			x	60
Recommendation 4.11: Increase participation rates in USDA nutrition assistance programs through creative outreach and improved customer service, state adoption of improved policy options and technology systems, and effective practices to ensure ready access to nutrition assistance program benefits, especially for children.	x	x	x	62

V. Increasing Physical Activity				
Recommendation	**Federal action**	**State or local action**	**Private sector action**	**Page**
Recommendation 5.1: Developers of local school wellness policies should be encouraged to include strong physical activity components, on par with nutrition components.		x		73
Recommendation 5.2: The President's Challenge should be updated to ensure consistency with the Physical Activity Guidelines for Americans and to ensure ease of use and implementation by schools. Private sector partners with an interest in physical activity should help enroll children in the Presidential Active Lifestyle Award program	x		x	73
Recommendation 5.3: State and local educational agencies should be encouraged to increase the quality and frequency of sequential, age- and developmentally- appropriate physical education for all students, taught by certified PE teachers		x	x	73
Recommendation 5.4: State and local educational agencies should be encouraged to promote recess for elementary students and physical activity breaks for older students, and provide support to schools to implement recess in a healthy way that promotes physical activity and social skill development.		x		73
Recommendation 5.5: State and local educational agencies should be encouraged to provide opportunities in and outside of school for students at increased risk for physical inactivity, including children with disabilities, children with asthma and other chronic diseases, and girls		x	x	74
Recommendation 5.6: Federal, state, and local educational agencies, in partnership with communities and businesses, should work to support programs to extend the school day, including afterschool programs, which offer and enhance physical activity opportunities in their programs	x	x	x	77
Recommendation 5.7: State and local educational agencies should be encouraged to support interscholastic sports and help decrease prohibitive costs of sports by curbing practices such as "pay-to-play," working with other public and private sector partners.	x	x	x	78
Recommendation 5.8: Reauthorize a Surface Transportation Act that enhances livability and physical activity.	x	x		81

Recommendation 5.9: The Environmental Protection Agency should assist school districts that may be interested in siting guidelines for new schools that consider the promotion of physical activity, including whether students will be able to walk or bike to school	x	x		81
Recommendation 5.10: Communities should be encouraged to consider the impacts of built environment policies and regulations on human health.	x	x		81
Recommendation 5.11: The Federal Safe Routes to School Program (SRTS) should be continued and enhanced to accommodate the growing interest in implementing Safe Routes to Schools plans in communities.	x			82
Recommendation 5.12: "Active transport" should be encouraged between homes, schools, and community destinations for afterschool activities, including to and from parks, libraries, transit, bus stops, and recreation centers.		x	x	82
Recommendation 5.13: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities	x	x	x	83
Recommendation 5.14: The Federal government should continue to support investments in a wide range of outdoor recreation venues, such as National Parks, Forests, Refuges and other public lands, and expand opportunities for children to enjoy these venues.	x			84
Recommendation 5.15: Local governments should be encouraged to enter into joint use agreements to increase children's access to community sites for indoor and outdoor recreation		x		84
Recommendation 5.16: The business sector should be encouraged to consider which resources and physical assets like fields and gyms can be used to increase students' access to outdoor and indoor recreational venues			x	84
Recommendation 5.17: Entertainment and technology companies should continue to develop new approaches for using technology to engage children in physical activity			x	84

Endnotes

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Best-Practice Guidelines for Physical Activity at Child Care

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Best-Practice Guidelines for Physical Activity at Child Care

abstract

Research has indicated that the child care center is a very strong predictor of preschool-aged children's physical activity levels, making this an important setting to help young children obtain physical activity that is appropriate for their health and development. However, some evidence suggests that organized child care may not adequately support children's physical activity needs. Although many organizations provide recommendations, guidelines, or standards for motor skill development and physical activity opportunities, no set of guidelines exist that directly target the overall physical activity environment at child care. Because of the lack of comprehensive recommendations, the Nutrition and Physical Activity Self-assessment for Child Care best-practice guidelines for healthy weight development were created on the basis of an extensive review of existing guidelines, research evidence, and expert review. The purpose of this article is to present these physical activity best-practice guidelines and provide data on how these guidelines compare to current practice in a large sample (N = 96) of child care centers in North Carolina. These best-practice guidelines include recommendations for 8 unique components of the child care environment, including active opportunities, fixed play environment, portable play environment, sedentary opportunities, sedentary environment, staff behavior, staff training/education, and physical activity policies. Our results showed that only a few of the best-practice guidelines were achieved by a majority of the 96 North Carolina child care centers that participated in this study. Establishing comprehensive guidelines for physical activity at child care could result in higher activity levels and healthier children, but more research is needed. *Pediatrics* 2009;124:1650–1659

The rapidly increasing prevalence of childhood obesity is of great public health concern.[1] Nationwide data show that the percentage of obese children (BMI ≥ 95th percentile) aged 2 to 5 years increased more than 30% between 2001 and 2004.[2] As is well known, obesity can lead to such chronic health problems as type 2 diabetes, hypertension, and hyperlipidemia. These conditions may be even more serious if obesity develops at younger ages[3]; however, regular physical activity seems to help protect against obesity during the preschool-age period.[4] In addition, physical activity contributes to a child's motor development and provides a foundation for health benefits both during childhood and into the future.[5–7]

One of the best opportunities to promote the development of physically active lifestyles among a large number of young children lies in child care settings.[8,9] In the United States, more than half of all 3- to 6-year-

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KEY WORDS

child care, physical activity, environment, guidelines

ABBREVIATIONS

NASPE—National Association for Sport and Physical Education
NAPSACC—Nutrition and Physical Activity Self-assessment for Child Care
EPAO—Environmental and Policy Assessment and Observation
ECERS—Early Childhood Environment Rating Scale

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olds are enrolled in center-based child care, and those who attend such centers spend an average of 24.8 hours there per week.[10] In North Carolina alone, there are 5052 child care centers with 248 607 children enrolled, and the majority of the children are between the ages of 2 and 5 years.[11]

The importance of the child care setting in helping young children obtain physical activity levels that are appropriate for health and development is reinforced by recent research that indicated that the child care center is a very strong predictor of preschoolers' physical activity levels.[12] However, other evidence has suggested that organized child care may not adequately support children's physical activity needs. For example, Sturm[13] noted an inverse relationship between time spent in child care and time spent engaged in active play. In addition, research by Pate et al[14] showed that children spend more than 80% of their time in sedentary activities while at child care, and only 2% to 3% of their physical activity could be classified as moderate or vigorous.

In 2002, the National Association for Sport and Physical Education (NASPE) put forth the first physical activity guidelines specifically for preschool-aged children.[6] They recommended that children accumulate at least 60 minutes of unstructured (free-play) and at least 60 minutes of structured (adult-led) activities daily. Although the NASPE described the type and amount of activity children should receive, their recommendations provided no specific guidance for the child care setting. Other organizations have provided some recommendations for supporting physical activity opportunities at child care but often lacked specificity and failed to consider the comprehensive array of environmental factors that influence children's physical activity (a full listing of existing national recommendations for physical activity in preschool-aged children is available on request from the corresponding author).

The purpose of this article is to present a set of physical activity best-practice guidelines and data to show how these guidelines compare to current practice in a large sample of child care centers in North Carolina. Results from this comparison are used to identify areas that could benefit from articulated guidelines.

METHODS

Development of Best-Practice Guidelines

The Nutrition and Physical Activity Self-assessment for Child Care (NAPSACC) was developed to promote healthy weight in young children in child care settings. It was designed to address environments, policies, and practices thought to influence nutrition and physical activity behaviors of children. Because of the lack of comprehensive recommendations specific to the child care setting, the NAPSACC best-practice guidelines for healthy weight development were created. Although our best-practice guidelines were based on a careful search of physical activity recommendations and standards from a number of authoritative organizations,[15] no single organization provided adequate guidance. In addition, most existing recommendations and standards failed to provide specific guidance. Where only general or no recommendations existed, a best-practice guideline was developed by using research evidence and expert opinion from a national panel of physical activity researchers and a group of North Carolina public health and child care professionals.[15] The NAPSACC guidelines for physical activity and a list of the national organization source documents from which these best practices were drawn are shown in Table 1.

Procedures

The NAPSACC program uses a center-based self-assessment instrument based on the NAPSACC guidelines to help child care providers identify and plan nutrition and physical activity changes appropriate for their facility.[15] As part of the evaluation of the NAPSACC, baseline assessments of centers' physical activity and nutrition environments were conducted in the fall of 2005 by research staff; data from the physical activity component are presented in this article. All study procedures and activities were approved by the University of North Carolina's Institutional Review Board.

Sample

A convenience sample of 96 child care centers from 33 counties across North Carolina was recruited to participate in this study. These child care centers represented all 3 regions of North Carolina (western, eastern, and central Piedmont). Most ($n = 84$) were part of an evaluation of the NAPSACC intervention,[16] but data from 12 additional centers were collected as part of an exploratory study to test the usefulness of the self-assessment instrument alone. Details about center recruitment can be found elsewhere.[16]

Assessment of the Physical Activity Environment

The centers' physical activity environments were assessed by using the Environmental and Policy Assessment and Observation (EPAO) instrument,[17] which was designed to evaluate child care physical activity policies, practices, and environments specifically for the NAPSACC program. Before the baseline observation, all research staff participated in a training that included a detailed review of the EPAO components, mock observations, and a practice observation in which trainees were compared with our

TABLE 1 NAPSACC Best-Practice Recommendations

Characteristic	NAPSACC Best Practice
Active opportunities[6,9,23–26,39,40]: daily opportunities that may result in more physical activity	Children provided with at least 120 min of active playtime each day Teacher-led physical activity provided to children ≥2 times per day Outdoor active playtime provided ≥2 times per day
Fixed play environment[9,25,26,39,40]: equipment that is anchored or fixed within the center's outdoor environment	Outdoor play space includes open, grassy areas and a track/path for wheeled toys Indoor play space available for all activities, including running Wide variety of fixed play equipment provided to accommodate the needs of all children
Portable play environment[25,26,39,40]: presence of several types of play equipment that can be transported and used in various locations	Large variety of portable play equipment available for children to use at the same time Outdoor portable play equipment freely available to all children at all times
Sedentary opportunities[6,23–25,27,28,40]: daily opportunities that may result in little or no physical activity	Television or videos rarely or never shown Children are not seated for periods of >30 min
Sedentary environment[a]: items in the physical environment that may promote or discourage physical activity	Visible support for physical activity provided in classrooms and common areas through use of posters, pictures, and displayed books Prominent display of sedentary equipment should be limited (eg, televisions, videos, and electronic games)
Staff behavior[6,23,25,26,39,40]: interactions between staff and children that may promote or discourage physical activity	Staff should join children in active play Staff should encourage children to be active Active playtime should never be withheld as punishment, and additional active playtime should be given as a reward
Physical activity training/education[6,9,23,25,26,39,40]: training and education for children, staff, and/or parents that may increase participation or knowledge related to physical activity	Physical activity education is provided to children by using a standardized curriculum at least ≥1 time per week Physical activity education opportunities should be offered to parents ≥2 times per year
Physical activity policies[23–25,39]: child care center has written policies that address facilitation of physical activity	Physical activity training (not including playground safety) should be provided for staff ≥2 times per year Written policies on physical activity should be available and followed

[a] No national recommendations were found for this area.

gold-standard observer. To prevent observer drift, all staff periodically underwent retraining on the EPAO protocol.[17]

The full-day EPAO observation was scheduled at the center's convenience and took place in a classroom for 3-, 4-, or 5-year-olds that was chosen by the center director. Children and center staff were observed, beginning with the first morning meal and continuing until the last child in the observed classroom left for the day. In addition, center documents were reviewed for evidence of physical activity training of staff, systematic physical activity education of children, and efforts to communicate physical activity information to parents and documentation of written physical activity policies. In this direct observation and document review, 8 specific environmental characteristics were assessed: active opportunities (3 items); fixed and portable play environment (7 items); sedentary opportunities (3 items); sedentary environment (3 items); staff behavior (3 items); physical activity training and education (4 items); and physical activity policies (5 items). Items from the EPAO instrument parallel the NAPSACC best-practice guidelines and describe the degree to which centers achieve this standard. Reliability and validity evidence for the instrument demonstrate strong agreement between observers within centers (intra-correlation coefficient: 0.47–1.00).[17] Although the EPAO instrument does not measure child physical activity directly, previous research has shown that children at centers with higher EPAO scores (above median) get more moderate or vigorous physical activity and less sedentary activity compared with children at centers with lower EPAO scores.[18] A copy of the EPAO is available on request from the corresponding author.

RESULTS

Center Demographics

Using the North Carolina 1- to 5-star rating system,[19] with 5 stars being the highest, ~50% were 3-star centers, whereas 5% held 1-star ratings and 11% had 5-star ratings. Ninety-three percent of the centers were open until at least 4:30 PM, allowing for a full day of care; only 7% closed at or before 3:30 PM. Median center enrollment was 66 children, and nearly half of those enrolled were 3- to 5-year-olds. More than 75% of the centers participated in the Child and Adult Care Food Program.[20] The race/ethnicity distribution of the children who were attending these centers was similar to the demographics of North Carolina's population: 60% white, 28% black, 4.2% Native American, and 3.6% Hispanic/

Latino. On average, centers had been in operation for 17 years. Data from these centers and how well they met the best-practice guidelines are described below and summarized in Table 2.

Meeting Best-Practices Guidelines

Active Opportunities

The active opportunities guideline addresses total activity time, teacher-led activities, and time spent outside by children at a center. Although only 13.7% of the centers met the NAPSACC best-practice guideline of 120 minutes of active playtime per day, nearly one third of them provided more than 90 minutes of activity on the day of observation. However, 6 centers provided only 15 minutes of activity time. Teacher-led activity was observed in 70% of the centers, but the amount of structured activity time ranged from <15 minutes in 36% of the centers to more than 60 minutes in 1 center. As for meeting the best-practice guideline, 40% of the centers provided 2 or more occasions of teacher-led physical activity. A large proportion (88%) of centers included outdoor play on the day of observation, and children at more than half of the centers went outside 2 or more times. In this assessment, specific amounts of outside time provided for the children were not recorded.

Fixed Play Environment

This best-practice guideline refers to fixed or anchored equipment, open and grassy outdoor spaces that include paths for wheeled toys, and indoor space appropriate for gross motor movement. Nearly all the centers (96%) had sandboxes, tunnels, and slides, and almost as many (95%) had large climbing structures. However, only 16% of the centers had indoor play space suitable for a variety of gross motor activities (eg, running and large group games).

TABLE 2 Meeting NAPSACC Best-Practice Recommendations on the Basis of the EPAO Instrument

Variable	No. (%) of Centers
Active opportunities	
Total active play, min	
0–14	6 (6.3)
15–30	10 (10.5)
31–45	10 (10.5)
46–60	13 (13.7)
61–90	24 (25.3)
91–120	19 (20.0)
>120	13 (13.7)
Missing	1
Total structured physical activity, min	
0	29 (30.5)
1–14	34 (35.8)
15–30	23 (24.2)
31–45	7 (7.4)
46–60	1 (1.0)
>60	1 (1.0)
Missing	1
Occasions of structured activity, *n*	
0	29 (30.2)
1	29 (30.2)
2	20 (20.8)
3	15 (15.6)
≥4	3 (3.1)
Outdoor play occasions, *n*	
0	11 (11.7)
1	33 (35.1)
2	46 (48.9)
≥3	4 (4.3)
Missing	2
Fixed play environment	
Fixed equipment	
Climbing structures	92 (95.8)
Balancing surfaces	79 (82.3)
Swinging equipment	39 (40.6)
Running spaces (open space to run and play)	96 (100)
Miscellaneous play structures (sand boxes, slides, etc)	92 (95.8)
Space present	
Indoor play space allows for	
Quiet play only	5 (5.2)
Limited movement	54 (56.3)
Some active play	22 (22.9)
All activities	15 (15.6)
Portable play environment: portable play equipment	
Floor play equipment (tumbling mats, carpet squares, etc)	52 (54.2)
Jumping play equipment (hula hoops, jump ropes)	33 (34.4)
Twirling play equipment (scarves, batons, ribbons)	30 (31.6)
Miscellaneous portable play equipment available (shovels, buckets, trucks, balls, tricycles, etc)	64 (66.7)
Sedentary opportunities	
Children seated for >30 min, *n*	
0	77 (81.9)
1	12 (12.8)
2	5 (5.3)
≥3	0
Missing	2
Television-viewing time (in classrooms with television present), min	
0	5 (11.9)
1–14	4 (9.5)
15–30	8 (19.1)
31–45	9 (21.4)
46–60	7 (16.7)
>60	9 (21.4)

TABLE 2 Continued

Variable	No. (%) of Centers
Sedentary environment: equipment present in classroom observed	
Television	42 (43.8)
Computer	53 (55.2)
Posters, books, or displays supporting physical activity	38 (39.6)
Staff behaviors	
Separate times staff joined in active play, *n*	
0	28 (29.5)
1–2	30 (31.6)
3–4	23 (24.2)
5–6	5 (5.3)
≥7	9 (9.5)
Missing	1
Separate times staff provided verbal prompts to increase physical activity, *n*	
0	27 (28.4)
1	20 (21.1)
2	16 (16.8)
3	11 (11.6)
≥4	21 (22.1)
Missing	1
Separate times staff restricted active play as punishment, *n*	
0	56 (58.3)
1	21 (21.9)
2	6 (6.3)
3	8 (8.3)
4	5 (5.2)
Separate times staff increased active play as a reward, *n*	
0	91 (97.8)
1	1 (1.1)
3	1 (1.1)
Missing	3
Physical activity training/education	
Physical activity training materials existed	
Yes	24 (25.5)
No	70 (74.5)
No opportunity to observe	2
Evidence of a written physical activity curriculum was present	
Yes	17 (18.1)
No	77 (81.9)
No opportunity to observe	2
Physical activity education opportunities are offered to parents, workshops and activities reviewed	
Yes	4 (4.3)
No	90 (95.7)
No opportunity to observe	2
Physical activity policy: written policy on physical activity	
Yes	53 (56.4)
No	41 (43.6)
No opportunity to observe	1

Portable Play Environment

This best-practice guideline refers to the availability and accessibility of play equipment that can be transported and used in various locations (eg, jump ropes, hula hoops, tumbling mats, batons, balls). Portable equipment was present at all 96 centers; however, the variety and amount varied. Floor equipment, such as tumbling mats, was available in nearly half the centers, whereas only one third of the centers provided jumping and twirling equipment. Balls and other miscellaneous equipment items were available in approximately two thirds of the centers.

Sedentary Opportunities and Sedentary Environment

These 2 guidelines address sedentary time and the sedentary environment within which children spend their time. Of the 96 centers that participated in the study, children were rarely seated for more than 30 minutes at a time; only 18% of the centers failed to meet this best-practice guideline. In 5 of those centers, children were seated for more than 30 minutes on 2 separate occasions. Television-viewing is a popular sedentary opportunity, and although television was present in less than half (44%) of the observed classrooms, television-viewing was observed in nearly all (89%) of these centers. On the day of observation, 17% of the centers allowed children to watch between 31 and 60 minutes of television, and 9% of the centers allowed children to watch more than 60 minutes of television. On a more positive note, nearly 40% of the centers displayed some physical activity promotional material in the observed classrooms.

Staff Behavior

Staff behavior at child care centers can be influential in the amount of physical activity that children receive during the day. This best-practice guideline addresses the number of times staff members joined in active play, used verbal prompts to increase activity, and restricted physical activity as punishment. At 61% of the centers, the staff members either failed to join in active play with children or did so only 1 or 2 times during the full-day observation. However, in some centers (15%), center staff participated 5 or more times. Staff in 40% of the centers used verbal prompts 3 or more times, whereas 1 or no prompts were observed in 49% of the centers. Center

staff were observed restricting active play as punishment at 40% of centers visited, whereas increasing active play as a reward was observed at only 2 centers.

Physical Activity Training/Education

This best-practice guideline refers to staff training, the use of a specific physical activity curriculum, and provision of physical activity education to parents. Documents reviewed included completed physical activity training certificates and available training materials. At 25% of the centers, documentation showed that at least 1 staff member had obtained some sort of training in physical activity. Only 18% of the centers provided visual evidence of a formal physical activity curriculum; however, use of the curriculum was not evaluated in this study. Only 4% of the centers documented that they provided physical activity education for parents (eg, workshops or other specific activities).

Physical Activity Policies

This best-practice guideline supports the use of written policies associated with physical activity. Fewer than 60% of the centers had evidence of formal, written physical activity policies. Of those with written policies, nearly all had a policy about either active play or inactive time; 48% included a statement about active play, and 56% had a policy about inactive time. However, the majority of these "policies" included such vague statements as "go outside daily, weather permitting." The policies did not include specific details about the amount of outdoor or indoor active playtime to be provided. Among the written policies that did exist, there were other references related to television use and television-viewing (3%), the play environment (8%), supporting physical activity (6%), and physical activity education (1%).

DISCUSSION

Physicians, public health leaders, and national organizations recognize the potential influence that child care environments have on young children's diet and activity behaviors and, hence, their weight development.[21–23] Providing opportunities for and promoting participation in physical activity are prime examples of how child care providers can contribute to children's energy balance. Although a number of organizations (eg, the American Academy Pediatrics,[24–26] National Association of the Education of Young Children,[27,28] Head Start,[29] and NASPE[6]) have addressed aspects of physical activity for young children, most documents have provided only general guidance. NASPE guidelines do provide specific recommendations for the amount of active playtime (both free and structured) that preschool-aged children should obtain each day; however, these recommendations are not specific to the child care setting.

In this article, we describe the first effort to integrate existing recommendations from authoritative organizations, evidence from the research literature, and feedback from expert panels into a set of comprehensive best practices for physical activity at child care centers. The NAPSACC best-practice guidelines include recommendations for 8 separate components of the child care environment and were designed to promote physical activity levels of young children. Although research evidence is limited, results of cross-sectional studies have suggested that environmental characteristics of the child care setting are associated with the young child's physical activity.[18,30,31]

The active-opportunities guideline suggests specific time for free play (120 minutes). Although some studies have shown that provision of active playtime is associated with child physical activity,[18,30] the optimal amount of time that should be provided is unclear. Currently, the only national recommendation for the amount of physical activity that preschool-aged children should receive daily is the NASPE 120-minute recommendation[6] (free play and structured activity time combined), which is not specific for the child care setting. At the time of this publication, only 3 states had specific time requirements for physical activity at child care, and these ranged between 20 and 60 minutes/day.[32,33] However, in this study we observed that 57% of the centers already offered more than 60 minutes of active playtime, most of which was designated as free play. On the basis of available recommendations and other information, we felt that 120 minutes of active playtime across a full day would give children generous opportunities to develop their motor skills, expend energy, improve fitness, and develop important social/behavioral skills and still be within a center's ability to provide this amount of time in its schedule.

In addition, the active opportunities guideline also includes the provision of structured physical activity (2 per day) and occasions of outdoor playtime (2 per day). Structured physical activity helps children develop basic motor skills that are the building blocks needed for future participation in sports and fitness activities.[5–7,34] Also, time outdoors has consistently been found to be a strong predictor of physical activity levels of young children.[34–37] The active opportunities guideline specifies that child care settings provide 2 or more occasions of both structured physical activity and outdoor play. Specifying the number of occasions, as opposed to a specific amount of time, is a new approach, one that offers flexibility for centers in how they provide these experiences. By comparison, NASPE recommendations

specify 60 minutes of structured physical activity daily.[6] We felt that requiring 60 minutes of structured physical activity every day might limit children's access to important free playtime[38] and be difficult for centers to provide because of the limited background and training of providers in children's physical activity. Occasions of physical activity could be provided through less formal teaching opportunities (eg, using music for spontaneous dancing or adding motor skills to interactive story time). These occasions could be easier for teachers to initiate throughout the day; however, research is needed to determine if these short occasions are beneficial to the development of preschool-aged children's gross motor skills.

Although some literature (eg, Caring for Our Children,[39] Early Childhood Environment Rating Scale [ECERS],[40] Head Start[29]) recommends time outside, NASPE guidelines do not mention time outdoors.[6] We feel that, along with total activity time, specifying multiple occasions of outdoor playtime is important. It has been observed that children are most active during the first 10 minutes of active play periods.[34] In fact, authors of a recent study of Latino children at a Head Start center found that adding 30 minutes to an existing 30-minute outdoor play period for morning and afternoon time on 2 separate days did not increase accelerometer-measured physical activity.[41] Thus, having multiple outdoor sessions may produce more physical activity than single, longer sessions.

The fixed- and portable-play-environment guidelines specify that child care settings should have an indoor play space available for a variety of gross motor activities and an outdoor play space that includes open, grassy areas, a track/path for wheeled toys, and a large variety of fixed equipment. In addition, portable play equipment for use inside and outside should be provided. Indoor active play areas are limited at child care settings but may be an important provision for physical activity in certain geographical regions with climate extremes. Research has shown that when children have a large and open play space, they modify their behavior to include more physical activities such as tag and other games that require running and chasing.[42] Quality outdoor environments may afford children greater amounts of physical activity and provide a stimulating learning environment; however, this research area is in its infancy.[43] Play equipment has also been shown to prompt children's participation in more physically challenging activities; conversely, its absence is associated with more sedentary and inactive games.[42] Bower et al[18] found that most centers had fixed play equipment (eg, large climbing structures) but a minimal variety and quantity of portable equipment (eg, balls, hoops, ropes). However, it was not fixed equipment but portable equipment that was found to be associated with greater amounts of physical activity, which has been confirmed in other studies.[18,31] It is difficult, however, to quantify the optimal amount of either fixed or portable equipment necessary to affect children's activity levels. Although these best-practice guidelines offer some guidance to child care professionals, more research in this area is needed.

Another critical component to promoting energy balance in children is limiting time spent in sedentary activities (sedentary opportunities). Recent observational studies have shown that children spend the majority of their time at child care being sedentary.[14,18,30,44–48] Brown et al[49] recently reported that a large sample ($n = 539$) of children spent 89% of their time in sedentary pursuits, 8% in light activity, and only 3% of their time in moderate or greater physical activity. Therefore, our best practices include a sedentary opportunities guideline that specifies avoiding continuous sitting for more than 30 minutes. This best-practice guideline also recommends that television/video be rarely or never used, which is consistent with many other recommendations (eg, ECERS, National Association of the Education of Young Children), although the American Academy Pediatrics recommends less than 2 hours of television/video use across the total day (including time at home). Because television-viewing has consistently been associated with risk for overweight,[50] we feel that this guideline is appropriate. Although sedentary opportunities and sedentary environment were initially represented as two discrete best-practice guidelines, future versions should integrate these two into a single guideline called "sedentary opportunities."

The staff-behavior best-practice guideline advises center staff members to encourage children to be active, to join children in active play, and, rather than withhold active playtime from children who misbehave, to reward good behavior with extra playtime. Although we observed some verbal prompting and activity modeling, restriction of activity was widespread (observed in >58% of the centers). This guideline may be necessary to clearly establish the important role that staff members play in the promotion of physical activity for children at child care settings.

The best-practices guideline for staffing training/education includes a component directed toward children, staff, and parents. Included in this guideline is the provision of teacher-led lessons that use standard curriculum materials available for use with preschool-aged children (eg, Color Me Healthy,[51] SPARK,[52] Animal Trackers[53]). In future versions of our best-practices docu-

ment, this component will be integrated into the active opportunities guidelines, and a component will be added to the staff-behaviors guideline that encourages informal teacher-led activity sessions (eg, dancing to music or outdoor games such as relay races). In addition to addressing formal child education, the education/training guideline treats staff training as an equally important component. When child care staff lack knowledge of existing recommendations for physical activity, fail to comprehend their role in affecting child activity, or have no familiarity with activity resources, some studies have revealed that lower levels of physical activity occur.[18,30] Lack of training may explain the failure of staff to be actively involved in the children's physical activity and the inappropriate staff behaviors that we observed. Research has shown a positive association between increased education and experience of teachers and time that children spend on physical activity[30,31,54] and motor skill development.[54] The ECERS-R instrument, one of the most widely used rating scales of child care quality, encourages staff to assist children with needed skill development by using appropriate equipment and providing creative ideas to enhance play.[40] Along with providing structured physical activity, adult supervision could encourage children during play and stimulate their participation (and time spent) in fundamental movement skills, including manipulative skills such as catching and throwing.[55]

Finally, few centers had written, comprehensive policy documents that addressed important components of the child care environment. Most of the policies that did exist related to time that the children would spend outside. Only a couple of the centers were concerned with staff behavior, staff training, or specific time for physical activity. Adoption of specific, written physical activity policies should contribute to more children being active during their child care day.

CONCLUSIONS

Although the NAPSACC best-practice guidelines may need additional modification, they represent the first effort to create a single set of comprehensive guidelines for physical activity for child care centers. Originally designed as part of a healthy weight intervention,[15] these guidelines are based on a review of existing recommendations from authoritative groups, additional research evidence, and advice from a panel of experts. Currently, no state has a set of existing policies and/or standards comparable in detail and/or breadth to the NAPSACC best practices as evidenced by 2 review articles.[32,33] Therefore, it is not surprising that only a few of the best-practice guidelines were adhered to by a majority of the 96 North Carolina child care centers that participated in this study. Recent research showed that child-initiated play is being eliminated from kindergarten classrooms and viewed as unimportant compared with more academic learning.[56] Because the preschool setting prepares children for kindergarten, child-initiated play and active playtime could be at risk of elimination.[56] Policy makers and child care providers would undoubtedly benefit from more specific physical activity recommendations and standards, and the NAPSACC best-practice guidelines provides a useful start toward this discussion. In addition, future research should address components of these guidelines relative to their importance and potential for promoting healthy weight development in preschool-aged children in the child care setting.

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Poison Centers Being Fiscally Poisoned: *The nation's health care crisis is now affecting the survival of our state poison centers—at least in California, according to a recent article (Arquist S.* The New York Times*, June 30, 2009, p. D9). A proposed plan to close a 24.3 billion dollar budget deficit would result in a 6 million dollar cut to the four regional poison centers in that state. The theory is that a national poison center line could relieve the state of its responsibility by having calls answered elsewhere. However, other states are also facing budget constraints and could not simply absorb the volume of calls, or take over the data collection and public education that currently being done by the regional centers in California. Of note, the federal government currently provides about 20 percent of poison center financing—the rest must come from states.*

Noted by JFL, MD

Best-Practice Guidelines for Physical Activity at Child Care

Christina McWilliams, Sarah C. Ball, Sara E. Benjamin, Derek Hales, Amber Vaughn and Dianne S. Ward

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Preschool-Aged Children's Television Viewing in Child Care Settings

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Preschool-Aged Children's Television Viewing in Child Care Settings

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WHAT'S KNOWN ON THIS SUBJECT: Most previous estimates of preschool-aged children's screen time were based on parental reports of home viewing. Estimates of screen time in day care settings are lacking.

WHAT THIS STUDY ADDS: Children experience considerable additional television viewing in day care settings. For many children, this may double their total amount of screen time.

abstract

OBJECTIVE: The goal was to quantify television viewing in day care settings and to investigate the characteristics of programs that predict viewing.

METHODS: A telephone survey of licensed child care programs in Michigan, Washington, Florida, and Massachusetts was performed. The frequency and quantity of television viewing for infants, toddlers, and preschool-aged children were assessed.

RESULTS: With the exception of infants, children in home-based child care programs were exposed to significantly more television on an average day than were children in center-based programs (infants: 0.2 vs 0 hours; toddlers: 1.6 vs 0.1 hours; preschool-aged children: 2.4 vs 0.4 hours). In a regression analysis of daily television time for preschool-aged children in child care, center-based programs were found to have an average of 1.84 fewer hours of television each day, controlling for the other covariates. Significant effect modification was found, in that the impact of home-based versus center-based child care programs differed somewhat depending on educational levels for staff members; having a 2- or 4-year college degree was associated with 1.41 fewer hours of television per day in home-based programs, but no impact of staff education on television use was observed in center-based programs.

CONCLUSIONS: For many children, previous estimates of screen time significantly underestimated actual amounts. Pediatricians should council parents to minimize screen time in child care settings. *Pediatrics* 2009;124:1627–1632

The American Academy of Pediatrics discourages television viewing in the first 2 years of life and recommends a daily limit of 1 to 2 hours of quality programming for older children.[1] Several previous studies documented that US preschool-aged children watch 1 to 3 hours of television per day.[2–6] Although quality educational programming does exist for 3- to 5-year-old children,[7–9] television viewing before the age of 3 was associated with cognitive delays, attentional problems, and sleep disorders in observational studies.[10–13] All previous, population-based estimates of children's screen time relied on parental reports of viewing in the home. Given that the majority of preschool-aged children are cared for by someone other than a parent, such reports may underestimate significantly the true amount of young children's screen time. In a previous study, we used data from a 1989 survey to estimate television viewing in child care programs.[14] The past 10 years have seen a significant increase in video products designed for very young children, and these now 20-year-old data are in need of updating.[15] Therefore, we conducted a study with 2 objectives, that is, to describe the frequency and amount of television viewing (including DVD and videotape viewing) in a representative group of licensed child care settings and to determine predictors of television viewing in these settings.

METHODS

Data Source

We surveyed home- and center-based child care programs from 4 states in different regions of the United States, in an effort to obtain a more-generalizable sample. The following states were selected: Florida, Massachusetts, Michigan, and Washington. For each state, a complete listing of licensed home- and center-based child care programs was obtained from the state agency in charge of child care licensing. A random sample, stratified according to both state and program type, was selected, and letters were mailed to selected child care programs, informing them that a staff member would be calling with a research survey. Research staff members made multiple attempts to reach each program, arranging for convenient times to call back to speak with the director or owner of the program when necessary. Informed consent was obtained, and participants were screened for eligibility; child care programs that did not provide full-time care to children <5 years of age were not eligible for inclusion. The Seattle Children's Hospital institutional review board approved the research protocol.

Outcome Measures

Our primary outcome measures were whether television was used in the child care program and the hours of television reported as usually watched by children in different age groups at the program. Participants were asked, "Do you ever use a TV, videos, or DVDs in any of your classrooms?" Those who responded "yes" were asked for which age groups (infants, toddlers, preschool-aged children, or school-aged children in after-school care) television was used and approximately how many hours each week it was used for each age group.

Covariates

We collected data regarding characteristics of the child care program, including hours open daily, number of staff members (in full-time equivalents), number of children, whether after-school care was provided on the premises for school-aged children, and the educational attainment of child care providers. As much as possible, the survey questions for these issues were based on those in the 1989 survey, to enable us to replicate the analysis. For home-based programs, the survey asked about the highest educational level achieved by the owner of the program; for center-based programs, we asked about the "highest educational level that most of the lead teachers had completed." The difference in these questions was necessitated by the fact that we were asking about primary child care providers in a number of classrooms within each center, compared with a single primary child care provider in home-based settings.

Statistical Methods

We used bivariate statistical analyses to compare descriptive characteristics of the home- and center-based program participants. Comparisons were made by using χ^2 tests for dichotomous and categorical variables and t tests for continuous variables. Multivariate linear regression analyses examined predictors of daily hours of television viewing among preschool-aged children. The first regression analysis examined program type (home- or center-based), daily hours open, after-school care, and staff education (dichotomized as 2- or 4-year degree versus high school diploma or some college). The second regression analysis examined whether there was an effect modification between program type and staff education, controlling for the same covariates. This analysis was motivated by our previous study in which educational levels for staff members interacted significantly with viewing time.[14] On the basis of our previous study, we estimated that we would need to enroll 100 programs of each type to have 80% power to achieve statistical significance for differences in viewing times.

RESULTS

We contacted owners or directors at 326 child care programs; 209 (64%) agreed to participate and, of those, 168 met eligibility criteria and completed

TABLE 1 Descriptive Characteristics of Participating Programs

	Home-Based	Center-Based	*P*
N	94	74	
Provides care for, %			
Infants	60	40	
Toddlers	81	61	
Preschool-aged children	84	74	
School-aged children	41	42	
Total no. of children, mean ± SD	7.9 ± 4.3	83.4 ± 58.6	<.001
Time open, mean ± SD, h/d	11.3 ± 3.1	11.0 ± 1.3	
Provides after-school care, %	44	57	.09
Educational attainment, %[a]			<.01
High school diploma	28	7	
Some college	21	23	
2-y college degree	23	31	
4-y college degree	28	39	
Any television use for, %			
Infants	12	0	.03
Toddlers	51	8	<.001
Preschool-aged children	70	32	<.001
School-aged children	49	31	

All *P* values of <.10 are reported.

[a] Of the owner for home-based programs and of the majority of lead teachers for center-based programs.

TABLE 2 Comparison of Television Viewing According to Child Care Program Type

	Home-Based (*N* = 94)	Center-Based (*N* = 74)	*P*
Television time, mean ± SD, h/d			
Infants	0.2 ± 1.3	0	NS
Toddlers	1.6 ± 2.4	0.1 ± 0.7	<.001
Preschool-aged children	2.4 ± 1.8	0.4 ± 0.9	<.001
School-aged children	1.6 ± 2.5	0.4 ± 1.0	<.01
Television time in centers where television is used at all, mean ± SD, h/d			
Infants	2.3 ± 3.8	NA	
Toddlers	3.2 ± 2.6	1.3 ± 1.7	.08
Preschool-aged children	3.4 ± 2.8	1.2 ± 1.3	<.001
School-aged children	3.2 ± 2.7	1.5 ± 1.4	.07
Daily television use, %			
Infants			.08
None	88	100	
≤1 h	10	0	
2–4 h	0	0	
5–10 h	2	0	
Toddlers			<.001
None	49	89	
≤1 h	21	10	
2–4 h	12	0	
5–10 h	17	2	
Preschool-aged children			<.001
None	30	64	
≤1 h	27	32	
2–4 h	18	1	
5–10 h	25	3	
School-aged children			.06
None	51	69	
≤1 h	20	24	
2–4 h	12	5	
5–10 h	17	2	

All *P* values of <.10 are reported. NA indicates not applicable; NS, not significant.

the survey. There were no differences in response rates according to state or program type. Of those, 94 were home-based programs and 74 were center-based. The most common reason for not meeting eligibility criteria was not providing care for preschool-aged children (eg, after-school care–only child care settings). The characteristics of the surveyed programs are presented in Table 1. Among home-based programs, 51% of owners reported having a 2- or 4-year college degree; in center-based programs, 70% of participants responded that most lead teachers had at least a 2- or 4-year college degree.

Television viewing was examined for infants, toddlers, preschool-aged children, and school-aged children. For each of the 3 younger age groups, children in home-based child care programs were exposed to significantly more television on an average day than were children in center-based programs (Table 2). For example, 70% of home-based program owners reported using television with preschool-aged children, compared with 36% of center-based programs (Fig 1). Among the respondents who reported using television with preschool-aged children, >90% reported that they used it either for educational reasons or for both educational and entertainment reasons. The mean time of daily television use for preschool-aged children in day care settings in which television was used at all was 3.4 hours in home-based programs, compared with 1.2 hours in center-based programs ($P <$ .001). When programs that reported no television use were included, the difference increased to 2.4 hours versus 0.4 hours, a sixfold difference ($P <$ .001). In the regression analysis of daily television time for preschool-aged children in child care, center-based programs were found to have an average of 1.84 fewer hours of tele-

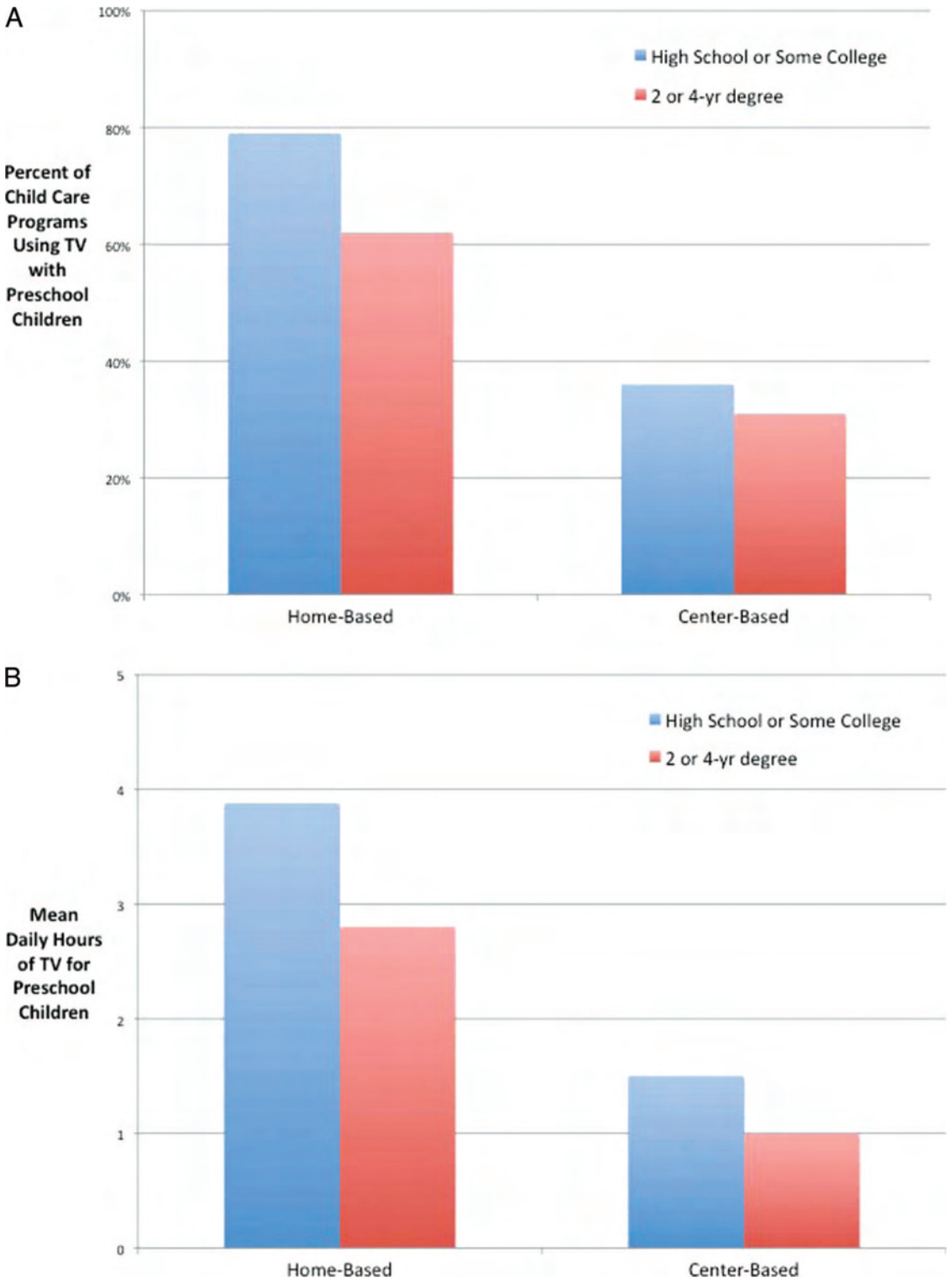

FIGURE 1
Television viewing according to program type and staff educational level. A, Television viewing according to program type and educational level of staff members. B, Mean hours of television viewing according to program type and educational level of staff members for programs that reported any viewing.

vision each day, controlling for the other covariates. Significant effect modification was found, in that the impact of home-based versus center-based child care programs differed somewhat according to the educational levels for staff members. Compared with home-based programs in which the director had not attended

college, children in home-based programs in which the director had a 2- or 4-year college degree watched fewer hours of television per day (−1.41 hours [95% confidence interval: −2.32 to 0.50 hours]), as did those in center-based programs in which the preponderance of teachers had a high school diploma or some college (−2.69 hours [95% confidence interval: −3.78 to −1.59 hours]) or a 2- or 4-year degree (−2.70 hours [95% confidence interval: −3.57 to −1.83 hours]).

DISCUSSION

We found that children in as many as 70% of home-based child care settings and 36% of center-based child care settings watch television daily. More importantly, when television is viewed at all, infants and children spend 2 to 3 hours watching in home-based programs and ~1.5 hours watching in center-based programs. To our knowledge, these are the first data on day care television viewing in 20 years, and they suggest that estimates of preschool-aged child screen time may underestimate actual screen time by >100%.[6] The current reported usage is consistent with findings from a previous study,[14] in terms of both the number of hours and the proportion of programs that use television at all. This lack of change is disconcerting, given the intervening publication of the American Academy of Pediatrics guidelines regarding television use for young children.[1,14,16]

Previous studies gave us ample reason to be concerned about this amount of screen time. First, infant and toddler television exposure was associated with obesity,[1,17–20] language delay,[13] inactivity,[21] aggression,[22–25] and decreased attention spans.[10,26–28] Second, longitudinal studies found that preschool viewing predicted viewing in later childhood.[29,30] Third, preschool environments represent important socialization and educational venues for children. Opportunities for interactions with peers and teachers, as well as outdoor play time, all of which are components of high-quality child care, are displaced by passive television viewing at the levels reported.[31]

Consistent with findings from other studies, the rationale for the use of television in day care settings seems to be that television is viewed as an educational activity.[5,32] However, at the levels of viewing reported here, even educational television has limitations. Previous studies of the benefits of high-quality television evaluated exposures of <1 hour.[7,9] Furthermore, even background television, defined as television that is on but not being actively viewed, was shown to interrupt children's play.[33]

There are some limitations to our analysis, which warrant consideration. First, our screen time estimates are based on self-reports. Although self-reports have been shown to be correlated with actual viewing in home environments,[34] the validity for child care environments has not been assessed. However, given that respondents presumably schedule their children's days, they are likely to be aware of the amount of time the television is on. Furthermore, social desirability bias would favor underreporting in this setting. Second, we selected child care programs from 4 states in the country, with regional variability. To what extent these findings can be generalized to other states is not known, but our results are consistent with a previous national estimate.[14] Third, we have little information on the content viewed. This is immaterial in the case of infant viewing, because there are no educational programs for that age group.[15] Although there is high-quality programming for older children (3–5 years of age) that can promote reading skills and prosocial behavior, the benefits of those programs have never been evaluated against an alternative of formal education and socialization by teachers.[7,9,35–38]

Despite these limitations, our findings highlight just how pervasive screen time is for very young US children. As efforts to promote high-quality preschool for all children are advanced, attention to screen time is warranted. The American Academy of Pediatrics statement in 1999 urged that television use be minimized for young infants and children[16]; our data suggest that clinicians must encourage parents to engage their children's caregivers about screen time outside the home as well.

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THE BODY TRAINS THE BRAIN: Brain Development and Motor Learning

Early and appropriate movement experiences build neural connections in the brain. Balance, manipulation, rhythms, midline activities, vestibular activities, and perceptual-sensory activities assist learning.

Reflection:

- When do children have the opportunity to experience physical activity and play?
- What types of physical activities do we encourage in child care and in homes?
- What do children learn while playing?

Movement enhances:

Early brain development
Neurological organization
Sensory integration (vestibular, proprioceptive, and tactile processing)

Sensory integration refers to how people use the information provided by all the sensations coming from within the body and from the external environment
- vestibular consists of processing information about movement, gravity and balance, primarily received through the inner ear;
- proprioceptive is processing information about body position received through the muscles, ligaments and joints and
- tactile processing is processing information about touch received primarily through the skin,

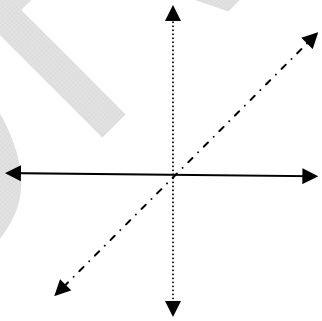
Visual processing - the sequence of steps that information takes as it flows from visual sensors to cognitive processing.
Auditory processing - the ability to hear auditory messages or sounds
Bilateral coordination - the use of both sides of the body together to perform a task efficiently
Hand-eye coordination - the coordinated control of eye movement with hand movement, and
Motor planning – a person's ability to think through and physically carry out a task.

The brain and the body can be thought of a coordinated unit. The brain supports all motor function and works together with the body to try to execute any task that a body asks of it.
Our brain is divided front to back by the motor cortex, making movement one source of stimulation that impacts all areas of the brain. Nerve cells are designed to send electrical messages from one part of the brain to another, or from the brain to different parts of the body. The electrical messages travel through a neuron as an electrical message, and across a gap to the next neuron. These gaps are known as synapse. By age 3, 80% of the neural networks (connections numbering 15,000 for each brain cell) are already made. Myelin is a fatty substance that coats the nerve pathways and helps speed the

transmission of electrical signals down, allowing much faster communications from the brain to the muscles.
The young brain already holds billions of nerve cells (neurons) necessary throughout the lifespan and the synapses are formed by early childhood experiences. These connections can be retained or destroyed, depending on their use. Movement and physical activity are primary brain builders.

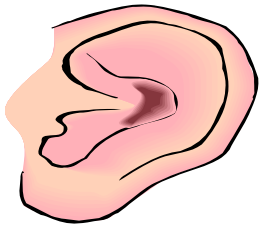
Brain networks are strongest in early childhood. **Physical activity stimulates the body to create a hormone that acts like Miracle Gro for the brain. (John Rate, MD, Harvard psychiatrist).** The developing brain uses incoming sensory, perceptual, and movement information to define and "wire" the young child's brain. Consistent, repeated, and multisensory learning experiences strengthen brain network connections. These experiences lead to gains in cognitive understanding and an increased ability to retrieve the information in new situations. The ability to make different movements with different sides and parts of the body at the same time is actually a learned skill that children develop over time. When children are young, they find it difficult to reach across the body with the right hand to reach something on the left, or vice versa. As they develop an awareness of midlines, children learn to make both sides of the body work together, and new pathways are made between the two hemispheres (sides) of the brain.
There are three midlines that run down the center of the body—one that divides left from right, one dividing top from bottom and one dividing front from back. Developing an awareness of midlines is important, as it allows children to start to coordinate movements on both sides of the body. Physical movements that cross the midline need to be introduced.

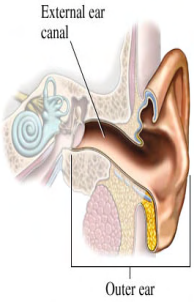
Left/Right (x) Top/Bottom (y) Front/Back (z)

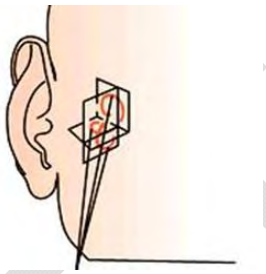


The vestibular system is what controls a person's motion awareness and stabilizing abilities in a shared space. The ear is the most fully developed of the sense organs at birth. Children love to make objects and their bodies fit into and around spaces. When they do this, they are learning about space and how much of it they take up. This is called "spatial awareness." Children need to gain an understanding of spatial awareness to figure out how to move themselves and objects around without knocking things over or banging into other things. When children try to move objects around and fit them into particular spaces, they also

learn about the spatial concepts of “directionality” (which way things need to go) and “constancy” (the idea that even though a shape may look different when it is turned differently, it is still the same shape). Children with poor spatial awareness may be clumsy and often bump into things, or they may write above or below the lines, or with no spaces between words.







Judging distance and time, what experts call “temporal awareness,” is a complex skill that takes a long time to develop and perfect, so it is important for children to start learning it as early as possible. When children have a good grasp of temporal awareness, they can estimate how fast objects travel—and coordinate their movements with the speed of an object. Temporal awareness is the same skill that children will use later when they’re judging the speed of cars before they cross the street or up to bat in their first Little League game!

FEED THE BRAIN

The body needs healthy nutrition, oxygen, and water. A healthy balance of fruits, veggies, protein, and whole grains supplies glucose to the developing brain and the brain of a 4 - 5 year old uses twice as much glucose as an adult. Oxygen is required for the brain, more than any other organ or the body because of it high rate of metabolism. Lack of oxygen impairs learning and attention. Moderate to vigorous physical activity is needed to pump blood to transport oxygen to the brain and enhance neuronal connectivity during the critical period. Children’s bodies are made of 65% water. Their brains are 85% water. A child’s brain needs water throughout the day to function properly and because children metabolize faster than adults, they can become dehydrated faster than adults.

OPPORTUNITY KNOCKS

In order to build and pave the highways for communication between body and brain, opportunity knocks at the time of early childhood. Children progress in their acquisition of both gross and fine motor skills as a result of a combination of brain maturation and muscle development. It happens in a fairly orderly and implied sequence in most children. Fine and gross motor abilities are all acquired gradually through continuous interaction with the environment. This is known as skill learning and is thought to be hard wired into all of us, as long as we get enough freedom to practice.

PHYSICAL ACTIVITY SELF-ASSESSMENT FOR CHILD CARE

GETTING STARTED:

Purpose: To guide providers through the self-assessment by clarifying questions and providing a term glossary.

General Instructions: When completing this instrument, it is important to honestly assess your facility's environment so you can set and meet goals to improve the physical activity environment, policies and practices. When answering the questions, keep in mind what your facility does a majority of the time as your practices may fall into more than one category. Be sure to involve any key staff members that may help in answering questions.

- Active play time is described as indoor or outdoor play time, which allows children to be able to run, skip, hop, jump, etc. This type of play time does not have any limitations.
- Teacher-led physical activity refers to an activity that is led by the teacher, promotes active movements and is designed so all young children are **active participants**.
- Withholding active play time for misbehavior is defined as making a child sit inside or outside for an extended period of time or shortening active play time for the entire class. It is not defined by short time-outs.
- Staff physical activity education and training includes education on specific areas related to physical activity such as ways to reduce sedentary time while at child care, ways to increase movement throughout the day, what are developmentally appropriate gross motor activities, etc.
- Physical activity education for children should include motor skill development.
- A written policy on physical activity that covers most of the above topics refers to policy that focuses on increasing physical activity at child care and mentions key areas including:
    - Active Play and Inactive Time
    - Play Environment
    - Supporting Physical Activity
    - Physical Activity Education for Staff, children, and Parents

Term Glossary:

Informal education: Discussion with the children by teachers that is not part of a formal lesson. This may include talk about that day's physical activity and how it is good for the body or talk on the playground about how running builds strong muscles.

Standardized curriculum: This can be a pre-existing curriculum such as Color Me Healthy, I Am Moving, I Am Learning, or it can be lessons put together by the teacher. Formal physical education would be part of the lesson plan.

Please read each statement or question carefully and check the response that best fits your child care facility. Refer to the instruction sheet for clarification of question, examples, and definitions.

Active Play and Inactive Time				
A. Active play time is provided to all children:	□ Less than 60 minutes	□ 60 - 90 minutes	□ 91-120 minutes	□ More than 120 minutes

	per day	each day	each day	each day
B. Teacher-led physical activity is provided to all children:	□ 1 time per week	□ 2 – 4 times per week	□ 1 time per day	□ 2 or more times per day
C. Outdoor active play is provided for all children:	□ 1 time per week	□ 2 – 4 times per week	□ 1 time per day	□ 2 or more times per day
D. Active play time is withheld for children who misbehave:	□ Often	□ Sometimes	□ Never	□ We provide more active play time for good behavior
E. Children are seated (excluding naps and meals) more than 30 minutes at a time:	□ 1 or more times per day	□ 3-4 times per week	□ 1-2 times per week	□ Less than once a week or never
F. Television and video use consists of the:	□ TV turned on for 5 or more hours per week	□ TV turned on for 3-4 hours per week	□ TV turned on 2 hours per week or less	□ TV used rarely or never
Play Environment				
A. Fixed play equipment (tunnels, balancing equipment, climbing equipment, overhead ladders) is:	□ Unavailable at our site	□ Only one type of equipment is available	□ Different equipment available that suits most children	□ Wide variety of equipment available and accommodates needs of all children
B. Portable play equipment (wheel toys, balls, hoops, ribbons) consists of:	□ Little variety and children must take turns	□ Some variety but children must take turns	□ Good variety but children must take turns	□ Lots of variety for children to use at the same time
C. Outdoor portable play equipment is:	□ Available during special times only	□ Located out of child sight and reach, staff must access	□ Available on request	□ Freely available by children at all times
D. Outdoor play space includes:	□ No open running spaces or track/path for wheeled toys	□ Very limited open running space, no track/path for wheeled toys	□ Plenty of open running space, no track/path for wheeled toys	□ Plenty of open running spaces and a track/path for wheeled toys
E. Indoor play space is available:	□ For quiet play only	□ For very limited movement (jumping and rolling)	□ For some active play (jumping, rolling and skipping)	□ For all activities, including running

Supporting Physical Activity				
A. During active play time staff:	□ Supervise play only (mostly sit or stand)	□ Sometimes encourage children to be active	□ Sometimes encourage children to be active and join children	□ Often encourage children to be active and join children in active

			in active play	play
B. Support for physical activity is visibly displayed in 2 to 5 year old classrooms and common areas by:	□ No posters, pictures, or books about physical activity displayed	□ A few posters, pictures, or books about physical activity displayed in a few rooms	□ Posters, pictures, or books about physical activity are displayed in most rooms	□ Posters, pictures, or books about physical activity are displayed in every room
Physical Activity Education for Staff, Children, and Parents				
A. Training opportunities are provided for staff in physical activity (not including playground safety):	□ Rarely or never	□ Less than 1 time per year	□ 1 time per year	□ 2 times per year or more
B. Physical activity education (motor-skill development) is provided for children through a standardized curriculum:	□ Rarely or never	□ 1 time per month	□ 2-3 times per month	□ 1 time per week or more
C. Physical activity education is offered to parents (workshops, activities and take home materials):	□ Rarely or never	□ Less than 1 time per year	□ 1 time per year	□ 2 times per year or more
Physical Activity Policy				
A. A written policy on physical activity that covers most of the above topics:	□ Does not exist	□ Exists informally, but is not written or followed	□ Is written, but not always followed	□ Is written and followed

Ammerman, AS, Benjamin, SE, Sommers, JK, Ward, DS. 2004. The Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) environmental self-assessment instrument. Division of Public Health, NC DHHS, Raleigh, NC, and the Center for Health Promotion and Disease Prevention, University of North Carolina at Chapel Hill. Revised May 2007.

Physical Development in Young Children 2 – 5 Years Olds

Motor Development refers to growth in the ability of children to use their bodies and physical skills. The different domains of physical development generally fall into:

gross-motor skills – development of large muscles and the ability to move from place to place or do physical activities that involve the large muscles of the body, arms and legs,

balance/coordination skills - development of a sense of balance and the ability to coordinate movements as to be able to perform more complex physical activities.

fine-motor skills – development of small muscles and the ability to control use of the hands and fee, and do activities that involve the small muscles of the fingers, toes and other parts of the body.

Gross-motor skills or large-muscle development in young children is necessary for crawling, walking, lifting and other types of physical activities. Things to remember about these large-motor skills in young children are:

- Different parts of a child's body grow at different rates. Large Muscle (LM) development occurs earliest, so Gross-Motor (GM) skills, like reaching, waving arms/legs, crawling/walking, appear first.
- Most of the physical growth occurs in a child's torso (trunk of the body) throughout the first year of life.
- Toddlers and preschoolers have a higher center of gravity. They are more prone to falls because the legs and body are not yet developed in proportion to the upper body region.
- The child's body proportions are more like an adult's, with the center of gravity more centrally located to help them achieve a sense of physical balance by age 6.
- Children are actively using their large muscles in running, wiggling and jumping by age 3 and 4. Since LM develop first, providing opportunities for outdoor play and physical activity or indoor running around is important.

Description of Typical Motor Skills for 2 Year Olds

Toddlers (2 year olds)

- Walks alone
- Walks backward
- Pulls toys behind while walking
- Carries large toy or several toys while walking
- Walks up stairs while holding onto something
- Begins to run
- Stands on tiptoe
- Throws a ball with overhand motion
- Kicks a ball
- Rolls a ball back to a person

- Imitate more complex motor skills, such as lifting objects
- Jumps in place or over small obstacles
- Jumps off a step without falling, maintains balance
- Goes up and down a slide with help
- Sits on or peddles a tricycle with support
- Participates in creative movement, such as dance

- **J**umping will usually take the appearance of arms stationary or "wing" at side, one foot used for take-off; knees extend first; more vertical than horizontal.
- **O**verhand throwing is manipulated by the hand coming back by flexing the elbows; throw is completed by extending the elbows. No trunk or foot motion.
-**W**hen kicking an object the leg will be the hinge action; ball is pushed forward.
-**W**hen catching the arms are held out rigidly; ball is trapped against chest and there will be no movement toward ball.

General Large Muscle Activities for Two Year Olds

- Go for lots of walks. Walk on various surfaces – grass, gravel, sand. Challenge their balance and help them learn better skills, walk on anything uneven.
- Two's like to jump. Use pillows, mattresses, and cushions for softening the landing on the floor.
- Use low slides at the playground.
- Get on the floor with toddlers. Children love having adults on their level.

Variations to activities that providers already do with two year olds:

- Children can **color** on a large piece of paper on the floor on their hands and knees. This activity helps to strengthen the hips and shoulders as well as encourage them to weight shift.
- Place paper on a wall, wall easel, of floor easel. Place pillows, cushions, or mats by the paper. To assist children with their balance, have children stand on the soft surface to **color**. This works for table top activity as well.
- Put paper on a stool or use something that is similar in height. Children can **color** on paper from their knees. The children will have to raise their bottom from off of their heels/calves. Uses strength and stability in the hip muscles.
- Tape paper to the wall. Child can lie on their back and lift their legs. Using a color between their toes they can use legs and feet to **color**. It is a great exercise to strengthen the legs and work on motor planning to determine how to succeed.

- Different textures for **balls** are good for developing tactile processing. Bumpy, "koosh", squishy, different shapes, etc.
- Kicking a **ball** allows the children to support themselves and shift their weight to one foot in order to kick it.
- Throwing **balls** requires balance, coordination, and the use of two hands. Place a tall block (cardboard blocks work well or cheese boxes) in front of them and have fun throwing the ball to hit the tower.
- While child is lying on the stomach and keeping their legs straight, they can hit a beach **ball** with a paper towel roll tube. Child will raise chest or lift backs to hit the ball.
- Hang a **ball** from a tree limb or the ceiling and encourage the child to reach up and jump to hit the ball.

- Children will have to bend down and pick up **blocks** when standing to build a tower. This will exercise the muscles in the back, legs, and abdominal area.
- Kick down **blocks** that have been built up.
- Step over **blocks** that have been lined up.

- Build a tower at the end of a mat or carpet piece. Children can roll, crawl or perform another movement into the tower to knock the **blocks** down. Child can rebuild the tower for the next child in the game.

- **Bubbles** are fun to march on or step on as they come to the ground. Children like to walk, jump, or stomp on bubble wrap. Create different "animal walks" down the strip.
- Encourage children to reach up onto their toes to pop the **bubbles**.

- **Obstacle courses** can use anything you already own to have children run, walk, or ride through.
- Jump ropes can be part of the **obstacle course**. Laid out on the ground, the jump rope can be two lines to walk through the obstacle course or they can jump over the rope.
- Hula hoops can be used in an **obstacle course** for stepping into and out of, or jumping into and out of.
- Cones can be used in an **obstacle course** for walking around or riding bikes or other toys around them.
- Cleaned used tires can be used in **obstacle courses**. Pushing tires, bouncing on tires, or stepping in and out of the tire.

- Sticky contact paper placed on the floor is fun to walk around on it.
- "Ring Around the Rosie" and the "Chicken Dance" are a way to have the child side step and lower and raise themselves from the ground.
- Make a "mountain" with blankets, pillows, inner tubes and place a large blanket over it. Children can walk, roll, and climb over the "mountain"
- Pose into many positions. Hold it for about 5-10 seconds before changing to another position. Encourage children to copy what you do.

Creativity is the key! Play and have fun! Find your creative side and make up games and activities as you go along through the day. Go for it!

"Sensory Motor Activities for the Young Child". Donna Staisiunas Hurley, Imaginart International, Inc. 1961.
"Sensory Processing Disorder", http://www.sensory-processing-disorder.com/gross-motor-activities-for-toddlers.html.

Description of Typical Motor Skills for 3 – 5 Year Olds

Three Year Olds

- Walks a few steps on tiptoe
- Walks backward long distances
- Can perform a standing broad jump (using a two-footed takeoff and covering some distance
- Balances on one foot for 5 seconds
- Changes speed, direction, and style of movement on signal
- Executes one to three hops on preferred foot (often stepping on non-supporting foot)
- Gallops with preferred foot leading (although 3 year olds don't commonly practice this)
- Moves forward and backward with agility
- Catches bounced ball most of the time
- Throws a ball 5 – 10 feet with overhand motion
- Walks up and down stairs with minimal support
- Kicks ball forward
- Moves or sways in rhythm to music

Four Year Olds

- Walks on tiptoe for long distances, walks a 4-inch balance beam
- Balances on tiptoes and on one foot for approximately 10 seconds

- Swings, climbs
- Executes seven to nine hops on the preferred foot
- Gallops with a steady rhythm (still with preferred foot leading)
- Performs four or more successive slides in the same direction
- Catches a ball with some practice
- Throws a ball 10 – 15 feet with overhand motion
- Walks up and down stairs
- Hops on one foot, somersaults
- Marches or dances in rhythm to music

Five Year Olds

- Runs with energy and coordination
- Walks a 2-inch balance beam
- Skips continuously over approximately 20 – 30 feet, although usually with an uneven (short-long) rhythm
- Catches a ball with some practice
- Throws a ball 5 to 15 feet with overhand motion
- Walks up and down stairs alone
- Hops on one foot for long distances, holding free foot to rear and using arms for balance
- Rides a tricycle and steers well
- Marches or dances in rhythm to music

Typical Patterns of Performance

SKILLS	3-Year-Olds	5-year-olds
Running	Shifts from flat-footed running to running heel-toe, and begins to use the arms in opposition to legs.	Runs with competence with heel-toe contact and arm-leg opposition, and heel to buttocks as the leg comes through.
Hopping	Stands on one foot, with free leg flexed to 90 degrees and in front of support leg. Arms are flexed at the elbows. Has difficulty leaving the ground.	Stands on one foot, with the free foot along-side the support leg. The body leans forward a little on take-off, and the hop is of a greater distance. Arms help to swing the body off the ground.
Skipping	Typically will not skip in an alternating step/ hop pattern.	Uses a deliberate step/hop pattern that looks like a skip, typically with an exaggerated step or hop. Often can't keep up the rhythmical skip pattern over distance.
Standing Long Jump	Jumps from two feet to two feet, with more upward than forward motion. The body shows little forward lean on take-off. Arms sing back toward the body on take-off.	Arms swing forward and back before take-off, but out to the side in the air like a winging action. The body is still more upright on take-off, and jump distance is not great. As the child advances, the arms swing forward but not higher than the head. The take-off angle is less than 45 degrees.

Typical Patterns of Performance

SKILLS	3-Year-Olds	5-year-olds
Kicking	Is stationary behind the ball. The kicking foot picks up in front of the support leg and kicks the ball forward by extending the kicking leg. As the child advances, child is still stationary behind the ball but swings the kicking leg behind the support leg and then quickly extends the kicking leg to make contact with the ball and kick it forward.	Takes two to three deliberate steps into the ball. The support leg is placed close to the ball. The kicking leg swings from behind, staying close to floor, to kick the ball. The child might step forward after the kick.
Catching	Presents the arms in front and tries to catch the ball by trapping it to the chest in a delayed response. As the child progresses, puts arms in front of the body, and the arms encircle the ball in a hugging action as it comes close.	Starts by presenting the arms in front of the body. Scoops the ball to the chest as it arrives to trap it, or grabs with the hands and brings it to the chest to secure. As child progresses, puts hands in the front of the body and reaches for the ball, securing it in both hands.
Striking	Stands stationary, facing the tossed ball. "Chops" at the ball, swinging the bat from high to low in front of the face. As the child advances, stands sideways and swings the bat across the front of the body, with the hip, trunk and shoulder rotating in one unit.	Stands sideways and swings at the ball with the bat. Steps toward the ball with the back foot (dominant hand, same foot). As child advances, stands sideways with the bat starting up by the shoulder. Swings at the ball and steps with the foot opposite to dominant hand. The bat follows through across the body.
Throwing	Often moves to a sideways-standing orientation; the throwing arm "slings" the ball by swinging across the body, with the hips, trunk and shoulders moving as one unit.	Steps and throws to the target. At first, the step is with the same foot as throwing hand. As child advances, steps with one foot, throws with the opposite arm. The arm comes from the ear, with little or no wind-up before the throw.

"Active Start: A Statement of Physical Activity Guidelines for Children From Birth to Age 5", 2nd Ed. (2009) http://www.AAHPERD.org , National Association of Sport and Physical Education.

Physical developmental health watch:

Because each child develops in their own particular manner, it is difficult to tell exactly when or how they will perfect a given skill. If the child displays the following signs of possible developmental delay for their age range, alert the

parent to have a possible discussion with their pediatrician. Don't be alarmed if the child's development takes a slightly different course.

Two Year Old

- Cannot walk by eighteen months
- Fails to develop a mature heel-toe walking pattern after several months of walking, or walks exclusively on this toes.
- Cannot push a wheeled toy by age two

Three – Four Year Old

- Cannot throw a ball overhand
- Cannot jump in place
- Cannot ride a tricycle

"Caring for Your Baby and Young Child: Birth to Age 5. (American Academy of Pediatrics. 2009.

MOVEMENT AWARENESS

(WHAT THE BODY DOES)

TERMS	*MOVEMENT DESCRIPTION*
STABILIZING MOVEMENTS	
Swaying	Not moving at the bottom, but moving at the top
Swinging	Not moving at the top, but moving at the bottom
Hanging	Fasten to a point above without support from below
Twisting	Rotation of one part of the body against another part which remains fixed and does not move
Turning	Change or reverse direction
Balance	Equalize weight or force
Curling	Movement of the parts of the body toward its center
Standing	Stationary, remaining upright
Sitting	No movement from a position on the bottom
Squatting	Crouching position, knees bent, bottom on or near the heels
Kneeling	Bend or rest on knee or knees
Pulling	Apply force to move something toward or with
Pushing	Apply force to move something away
Stretching	Moving away or elongation of body parts
Bending	Movement at a joint or joints
Shaking	Move to and fro with jerking motions
Dodging	Avoid something by moving quickly aside
Landing	Coming to rest or stop position
Transferring Body Weight	Movement from hands to feet and feet to hands
TRAVELING MOVEMENTS	
Walking	Slow gait and both feet provide double support
Climbing	Using hands and feet to go vertical up an object
Crawling	Movement involving hands and knees 1-2-3-4
Marching	Exaggerate a walking step
Gliding	Skating action
Running	Walking with fast speed or when both feet are off the ground in a fast gait
Leaping	Jumping from one foot and landing on the other foot
Jumping	Springing off with two feet and landing on two feet
Hopping	Springing off on one foot, landing on the same foot
Gallop	Step, chase…step, chase (Exaggerate a slide step)
Slide	Step, chase…step, chase in sideways position
Skipping	Step, hop…step, hop with alternating foot forward

MANIPULATING OBJECTS WITH MOVEMENTS

Throwing - Underhand and Overhand	Prepare, build momentum, propel object, follow through and maintain body balance (toss)
Rolling	Transferring weight to adjacent body parts around a central axis
Catching	Receive and control an object by body or its parts
Kicking - Punting	Contacting a ball with foot while maintaining balance for it to go far and straight
Trapping	Catching and holding object
Opening	
Closing	
Striking – Volleying and Dribbling	Propel an object away from the body with a hit, punch or tap (Upward, Downward)
Object Handling	

SPACE AWARENESS

(WHERE THE BODY MOVES)

Self Space Shared Space

DIRECTION

Up Down Right Left Forward Backward Sideways
Clockwise Counter Clockwise

LEVELS

Low Middle High

PATHWAYS

Straight Curved Zigzag

EXTENSIONS

Large Small Far Near

EFFORT AWARENESS

(HOW THE BODY MOVES)

TIME - SPEED

Slow Medium Fast Speeding Up Slowing Down
Sudden Quick Sustained

RHYTHM	SOUND
Beats	Loud
Cadence	Quiet
Patterns	Soft

FORCE - MUSCLE TENSION

DEGREES OF

Light	Medium	Strong	Weak	Heavy

CREATING

Starting	Sustained	Explosive

ABSORBING

Stopping	Receiving

CONTROLLING EFFORT

WEIGHT TRANSFER

Rocking	Stepping	Rolling	Flight

DIMENSIONS

Single Movement	Combination of Movements	Transitions

RELATIONAL AWARENESS

(AWARENESS OF SELF, OTHERS, AND OBJECTS)

BODY PARTS

Head
Hand
Ears
Eyes
Nose
Leg
Knee
Foot
Arms
Fingers
Wrist

Elbow
Ankles
Toes
Shoulder
Neck
Stomach
Back
Bottom
Hips
Chest

SHAPES					
Big	Curved	Wide	Narrow	Triangle	Circle
Small	Straight	Thin	Twisted	Square	Rectangle
Symmetrical				NonSymmetrical	

ROLES			
Leading	Mirroring	Taking Turns	Partner
Following	Matching		Solo
Groups…Between Groups		Unison…Contrast	

ASSOCIATION				
Letters	Numbers	Colors	Hand Signs	Pretense

LOCATIONS			
Near to…Far from	On…Off	In…Out	Over…Under
Around…Through	In front…Behind	Together…Apart	Top…Bottom
Facing…Side by Side	Meeting…Parting	Surrounding…Alongside	

Physical Education: A Movement Orientation, 2nd Ed., by Sheila Stanley, 1977, New York: McGraw-Hill

PHYSICAL DEVELOPMENTAL SKILL ASSESSMENT

2 - 5 Year Olds

LOCOMOTOR SKILLS	NOT OBSERVED /CANNOT DO	OCCASIONALLY DOES	CONSISTENTLY DOES
Two to Three Year Olds			
Walks across room			
Uses a hurried walk			
Walks backwards			
Pushes riding toy with feet while steering			
Uses a walker to get to the table			
Marches around room			
Walks up stairs with both feet on each step			
Walks up and down stairs alternating feet, holding the handrail or with help			
Jumps in place, two feet together			
Three to Four Year Olds			
Runs			
Avoids obstacles and people while moving			
Starts and stops using wheelchair			
Walks up and down stairs alternating feet			
Climbs at least two rungs of a jungle gym			
Climbs up and down on playground equipment			
Rides tricycle using feet to push forward			
Rides tricycle using pedals			
Gallops, but not smoothly			
Jumps over objects or off a step/box			
Four to Five Year Olds			
Runs smoothly, quickly, changes directions, stops/starts quickly			
Steers wheelchair into small playground spaces			
Jumps and spins			
Marches			
Moves through obstacle course			
Gallops and skips with ease			
Plays “Follow the Leader” using a variety of traveling movements			
Plays games that require jumping or kicking the ball			

"Preschoolers Moving and Learning", (The Moving and Learning Series). Rae Pica and Richarrd Gardzina. January 1990.

"Toddlers Moving and Learning", (The Moving and Learning Series). Rae Pica and Richard Gardzina. January 1990.

BALANCING SKILLS

	NOT OBSERVED /CANNOT DO	OCCASIONALLY DOES	CONSISTENTLY DOES
Two to Three Year Olds			
Squats to pick up toys			
Stands on tiptoes to reach something			
Gets in and out of adult chair			
Kneels while playing			
Straddles a taped line on the floor			
Sidesteps across beam or sandbox edge			
Three to Four Year Olds			
Walks forward along sandbox edge, watching feet			
Jumps off low step, landing on two feet			
Jumps over small objects			
Holds body upright while moving wheelchair forward			
Four to Five Year Olds			
Hops across the playground			
Hops on one foot then the other			
Walks across beam or sandbox edge forward and backwards			
Attempts to jump rope			
Hops, skips or twirls around and stops without falling			

MANIPULATIVE SKILLS

Two to Three Year Olds			
Carries a large ball while moving			
Flings a beanbag			
Throws a ball or other object by pushing it with both hands			
Catches a large, bounced ball against body with straight arms			
Kicks a stationary ball			
Three to Four Year Olds			
Throws a ball or other object			
Traps thrown ball against body			
Tosses bean bag into basket			
Strikes a balloon with large paddle			
Kicks ball forward by stepping or running up to it			
Four to Five Year Olds			
Steps forward to throw ball and follows through			
Catches a thrown ball with both hands			
Throws a hand sized ball			
Dribbles a ball			
Strikes stationary ball			
Bounces and catches ball			
Kicks moving ball while running			
Pounds with, shakes, twists, or swings an arm or a leg			

ADAPTATIONS FOR PHYSICAL ACTIVITIES

Equipment
- Use larger equipment
- Use lighter equipment
- Use of Velcro
- Use of larger goal/target
- Mark start or playing position on playing field or apparatus
- Use of lower goal/target
- Use of Scoops for catching
- Vary balls – size, weight, color, texture,
  (deflated, Nerf, brightly colored)

Boundary/Playing Area
- Decrease distance
- Use well-defined boundaries
- Simplify patterns
- Adapt playing are (small, obstacles removed)

Time
- Vary the tempo
- Slow the activity pace
- Lengthen the time
- Shorten the time
- Provide frequent rest periods

Rules, Prompts, Cues
- Demonstrate/model activity
- Partner assisted
- Disregard time limits
- Oral prompt
- More space between students
- Eliminate being eliminated
- Eliminate outs/strike-outs
- Allow ball to remain stationary
- Allow traveling
- Allow batter to sit in chair
- Place student with disability near teacher

Actions
- Change locomotor patterns, reduce steps, add steps,
- Modify grasps, use two hands,
- Modify body positions, kneel, stand or sit
- Reduce number of actions, reduce steps,
- Use different body parts

WORKING WITH CHILDREN WITH DISABILITIES

Some accommodations and/or modifications may be necessary as young children with disabilities develop and refine movement skills. Adapting and individualizing learning experiences can help assure that each child is exposed to activities that can help him or her reach his/her optimal development. While the vast majority of children with disabilities should have opportunity to work toward successful achievement of goals, accommodations and modifications to help these children reach success will need to be individually identified and implemented. For children with disabilities, providers working with the child will need to pay special attention to the Individualized Education Plan (IEP) or Individualized Family Service Plan (IFSP) and how curriculum adaptations and special education services can be provided to meet each child's individually identified developmental needs.

The instructional approaches in an IEP/IFSP plan should be useful in all parts of a child's day, including active play. Active play is an area where many children can be as successful as their peers. Commonly recommended strategies for children with delays are grouped below:

Speech and Language

- Make eye contact and get the child's full attention when giving new instructions
- Speak clearly and give one direction at a time
- Use verbal prompts in new activities, and encourage the child to repeat the prompt, e.g. "walk forward, walk forward, - child then repeats words
- Verbal cues used together with visual cues are important
  - Stop sign picture along with the word "Stop",
  - While saying/counting the number three, show what three times in the activity looks like

Cognitive Delays

- Strategies under speech and language can be effective in this area
- To allow the child to understand a direction or request give extra time
- Break down and activity into simple small steps
- Multiple repetitions of an activity should be given
- Classmates can be used as buddies or partners for support

Autism

- Strategies above can be effective in this area
- Be careful to consider a child that is highly sensitive to noise, light, movement and touch, or under-responsive to the sensations
- Routines are very important
- Often don't imitate others' actions like other children do

- Remove unnecessary or excessive stimuli for children with high sensitivity
- For transitions help children within an activity and between activities
- To give instructions or explain a sequence of activity use visual cues like pictures or symbols
- Plan for the child to “opt out” when the environment becomes too stressful

Physical Challenges

- Child may have conditions that interfere with their ability to move around on their own or control their arms and legs. Consult with a physical therapist to talk about modifications, inclusion strategies and any precautions necessary. Check to see if there is any special “adaptive” equipment to benefit the activity
- There should be adequate space and access in the environment
- Modify the rules or action – skip with feet – skip with hands in lap
- For part of an activity provide direct assistance
- Plan activities that work for all children regularly

Hearing Loss

- Strategies from the speech and language area will be helpful
- Positioning child where they can see the leader, in a well-lighted area, and materials should be bright and colorful
- Use materials that have interesting textures – balls and bean bags
- Mark the boundaries with high-contrast markings or tape

“*Circle of Inclusion”. University of Kansas Circle of Inclusion Project. (2002) http://circleofinclusion.org*

PE Central gives recommendations for physical education with preschool children and on “adapted physical education” for people with disabilities.

INTEGRATION of PHYSICAL ACTIVITY and MOVEMENT ACROSS THE CURRICULUM CONTENT AREAS

There is increasing evidence that because a child's earliest learning is based on motor skill development, all other learning is too. Movement is an important part of programs for early childhood. It contributes to the enhancement of a positive self-image, self-confidence, creativity, and self-expression. It also stimulates the learning process. Movement stimulates the learning process and promotes physical fitness and development of the whole child.

Children learn experientially – through play, experimentation, exploration and discovery. Researchers in the neuroscience field are finding this to be the case. The brain actually changes as a result of experience (Shore, 1997). In order for children's brains to function optimally, they must have experiences that produce and strengthen brain connections.

Neurophysiologist Carla Hannaford tells us, among other things, that:

- "movement activates the neural wiring throughout the body, making the whole body the instrument of learning" (p.13);
- beginning in infancy and continuing throughout our lives, physical movement plays an essential role in creating nerve cell networks that are the essence of learning (p.12); and
- in studies where children spent extra time in daily physical activity, they showed a higher level of academic success (pp. 101, 106-7).

Howard Gardner presented that we each possess eight different kinds of intelligence, to greater or lesser degrees, and in varying combinations. He has designated the bodily/kinesthetic as an intelligence. Gardner asserts that individuals can learn and know with their bodies or body parts. Movement promotes that intelligence. It enhances spatial intelligence and can help develop the musical, logical/mathematical, linguistic, interpersonal, and intrapersonal intelligences.

Fauth tells us that children are better served by multimodal learning. We retain:

- 10% of what we read;
- 20% of what we hear;
- 30% of what we see;
- 50% of what we hear and see at the same time;
- 70% of what we hear, see, and say; and
- 90% of what we hear, see, say, and do.

Today's research is showing us we need to look at the considerations that the functions of the mind have been thought of as superior to the functions of the body and movement relative to the body. We now need to look at them as a whole. As Hannaford (p. 16) states, "We have spent years and resources

struggling to teach people to learn, and yet the standardized achievement test scores go down and illiteracy rises. Could it be that one of the key elements we've been missing is simply movement?"

SCIENCE

Science is about exploration, discovery, investigation, and problem solving. Zoology is a study about animals and children are excited to learn more about how these creatures move, sounds they make, and how they alike and different. Meteorology is a study of the elements of weather and seasonal changes. Simple science concepts that can be explored are flotation, electricity, gravity, balance, sound, air, evaporation and absorption, magnetism, and machinery which are all physical science.

Preschoolers should be introduced to curiosity. It is an important for young children to use all their senses to find out about the world around them. The more the senses are used, the more children learn. Children should have the opportunity to experience balance, gravity, and about force and space not just being told about it.

MATH

Children can explore the concepts of big, little, long, short, high and low. When a child physically explores these concepts, it promotes word comprehension. Children can demonstrate all of the following with their body as an individual or as a group. Learning in contrast as well as similarities.

Big & Little	Long & Short	High & Low
Wide & Narrow	Late & Early	First & Last
Tall & Short	Light & Heavy	Highest & Lowest
Middle	Once	Longer than
Same length	Together	Twice
Few	Bunch	Group
Pair	Many/More/Most	

Shapes can be explored also. Children can use a jump rope to form a number on the floor with a jump rope. The number can then be traced by children moving along the rope with a locomotor skill of choice.

Recognition of body parts and reinforcing counting skills along with one-to-one correspondence can be meaningful in mathematics skills.

Basic geometry covers positional concepts. Above, below and on are three concepts that can be taught with the use of a jump rope. Children can stand in relation to the line. Add various tempos and make it a game.

CREATIVITY

To stimulate children's imagination and problem-solving skills, ask the children to create shapes with their bodies. (Children will give you as many different shapes as there will be children).

Round	Flat	High	Pointed
Low	Wide	Narrow	Crooked

Challenging children to move with limitations is another way to think creatively.

At a low level in space	At a high level
In a round shape	In a pointy shape
In a crooked shape	Using both hands and feet
Using any body part(s) but the feet	

LITERACY and LANGUAGE ARTS

Children can learn best through active involvement. Use movement and active learning to promote emergent literacy. Consider the connection to the following by movement and physical activity and the words taking on meaning:

- *Prepositions* – over, under, around, through, beside, and near objects
- *Rhythm of words* – clapping, or tapping or moving in cadence with a poem - children hear and feel the rhythm of words
- *Spatial orientation* – useful for letter identification and orientation of letters on a page, children moving in a room from left-right or top-bottom learning directional sense or showing the differences from high to low positions with words of shrink, melt, collapse, shrivel
- *Demonstrate words* – stomp, pounce, stalk, slither, smooth, strong, gentle, enormous – action words or descriptive words have more relevance
- *Adverbs and Adjectives* – slow walk or skip lightly – children learn the meaning in both body and mind
- *Communication* – playing together gives opportunity to speak and listen to each other
- *Stringing actions to form sequences* – choosing components that flow naturally (beginning, pause, and ending) – linking words to form sentences and paragraphs
- *Acting out words in a poem, story, lyrics* – Children learn to use multiple senses – more learned and retained
- *Left and Right Brain Communications* – physical activity/movement provides opportunities to cross the body midline – integration of the brain's hemispheres is essential to the ability to read and write
- *Opposite verbs* – open and close and using various tempos, alternating opening and closing – hand muscle strengthening activity

TRANSITIONS

Use activities that incorporate physical activities. When it is time to move from where children have gathered to another space in the room. Incorporate traveling skills using the skills within their capabilities.

Jumping (two feet)	Hopping (one foot)	Marching
Walking (lightly; stomping)		Jogging
Galloping		Skipping

Brisk or forceful movement with a "Follow the Leader" activity

Move like animals

Cleaning up the room before the song ends

ADDITIONAL SKILLS

Additional skills that children will have the opportunity to develop and practice will be:

Sharing	Taking Turns	Kindness
Helpfulness	Cooperation	Self-expression
Imagination	Leadership	Creativity

Integrating physical activity with other subject areas gives children more opportunities to move during the program day. Learning in all areas of the curriculum is increased as children have more opportunities to understand the relationships that exist across content areas as they transfer what they learn in one area to other environments. It is know that it is through movement and physical activity that young children learn about their world. Additionally, the health benefits of physical activity, movement is an important part of the young child's life and education, through movement children develop social, emotional and cognitive skills. For young children, movement is a critical means of communication, expression, and learning. It is imperative that providers give children as many opportunities as possible to be physically active and to learn through movement. Young children learn through involvement, observation and modeling, which require teachers to facilitate children's active involvement in learning. Teachers/providers show interest and participate in movement activities, engaging children in the activity, thereby extending the children's learning.[1]

[1] *Appropriate Practices in Movement Programs for Children Ages 3 – 5.* National Association for Sport and Physical Education/ American Alliance for Health, Physical Education, Recreation & Dance. (2000).

"*Frames of mind: The theory of multiple intelligences".* Gardner, H., (1993), New York: Basic Books.

"Smart moves: Why learning is not all in your head". Hannaford, C., (1995), Arlington, VA: Great Ocean Publishers.

"Rethinking the brain: New insights into early development". Shore, R., (1997), New York: Families and Work Institute.

"Wiggle, Giggle, and Shake: 200 Ways to Move and Learn". Pica, R., (2001), Beltsville, MD: Gryphon House.

LITERACY CONNECTIONS: BOOKS TO MOVE TO

This page contains a list of children's books that can be read and the provider can incorporate movement and physical activity. Developmentally appropriate practices promote early literacy skills and movement at the same time. Children can move to the words in a variety of creative ways.

TITLE	AUTHOR	YEAR
Amazon Sun, Amazon Rain	Ximena de la Piedra	1994
Anna Banana, 101 Jump Rope Rhymes	Joanna Cole	1998
The Ants Came Marching	Martin Kelly	2000
Barnyard Dance	Sandra Boynton	1993
Boom Chicka Rock	John Archambault	2004
Brown Bear, Brown Bear, What Do You See	Bill Martin, Jr.	1967
Catch the Ball!	Eric Carle	1982
The Caterpillar Fight	Sam McBratney	1996
Clap Your Hands	Lorinda Bryan Cavley	1992
Down By the Bay	Raffi	1988
Five Green and Speckled Frogs	Martin Kelly & Phil Legris	2000
Five Little Ducks	Raffi	1989
Five Little Monkeys Jumping on the Bed	Eileen Christelow	1989
From Head to Toe	Eric Carle	1997
Hey! Wake Up!	Sandra Boynton	2000
Hop Jump	Ellen Stoll Walsh	1993
Hop! Hop! Hop!	Ann Whitford Paul	2005
If You're Happy and Know It!	Jane Cabrera	2005
Jump, Kangaroo, Jump!	Stuart J. Murphy	1999
Monkey See, Monkey Do	Marc Grave	1993
Monster Musical Chairs	Stuart J. Murphy	2000
One, Two, Skip A Few!	Roberta Arenson	1998

Over in the Grasslands	Anna Wilson and Alison Bartlett	1999
Polar Bear, Polar Bear, What Do You Hear	Bill Martin, Jr.	1992
Shake My Sillies Out	Raffi	1987
Sheep Wants to Jump	Clive Batkin	2003
Sometimes, I Like to Curl Up in a Ball	Vicki Churchill	2003
Stomp, Stomp!	Bob Kolar	1997
Stop Drop and Roll	Margery Cuyler	2001
The Hokey Pokey	Larry La Prise	1997
Under the Sea	Emma Lynch	2005
Walking Through the Jungle	Debbie Harter	2006
We All Went On Safari	Larie Krebs	2003
We're Going On A Bear Hunt	Michael Rosen	1989
Who Hops?	Katie Davis	2001
Who Jumps?	Edwina Lewis and Ant Parker	2003

Physical Activity/Movement Education Curriculum Selection Tool

A curriculum is a system for delivering learning experiences to children. A movement education curriculum is the framework that provides guidance for teaching skills and providing physical activity instruction. A high quality curriculum will be based on national standards which describe what a child should know and be able to do.

A movement education/physical activity curriculum will emphasize meaningful content, which includes the following:

- Instruction in a variety of motor skills designed to enhance child development,
- Fitness education and assessment that allows for understanding and improvement of physical well-being,
- Development of cognitive concepts related to motor skills and physical activity,
- Opportunities to improve social and cooperative skills, and
- Opportunities to increase the value placed on physical activity for health, enjoyment, self-expression, and confidence.

It is sequential in that it involves ensuring that motor skills, physical activity, and assessments are age and developmentally appropriate. Appropriate sequencing involved methods of teaching motor and movement skills that ensure that basic skills lead to more advanced skills. The sequencing also plans to appropriately monitor, reinforce, and plan for children's learning.

Review curriculum materials, state and local standards.
(Steps to Curriculum Selection)

1. Determine curriculum description.
    - Name of Curriculum
    - Year Developed or Published
    - Year Revised (if applicable)
    - Publisher
    - Overall goals and focus of the curriculum
    - What ages does the curriculum address?
    - How many lessons/sessions are in the curriculum?
    - What support does the curriculum provide to notify parents and families about the curriculum or content of instruction?
    - What materials, tools, technology, and resources are included in the curriculum (e.g., lesson plans, teaching aids such as posters, assessment tools)

2. Consider some points of accuracy.
    - Does the curriculum use accurate and appropriate terminology?
    - Are the sources made clear?
    - Are the sources reputable?
    - Are information, examples, scenarios, etc., relevant to the children's lives?

3. Consider some points of acceptability.
    - Is the curriculum compatible with student needs, or perspectives of families and the community?
    - Is the curriculum consistent with state statutes or policy, requirements, or standards?
    - Does the curriculum address the movement education and physical activity needs of all children, including those with disabilities?
    - Does the curriculum reflect the perspectives, diversity, and needs among children, families, and the community?
    - Is there anything in the curriculum sponsorship, information, or materials that reflects and inappropriate marketing message or improper attempt to influence adults and children?

4. Consider some points of feasibility.
    - Can the curriculum be reasonably implemented within the roles of the adult staff teaching? (level of training)
    - Can the curriculum be implemented within the available instructional time? (time can be adjusted, too lengthy, too short)
    - Can the curriculum be implemented with the existing physical education facilities and equipment. (can be addressed, not feasible)

5. Consider points of affordability.
    - What is the initial cost?
    - What is the cost of replacing the curriculum materials annually?
    - Are there additional costs related to curriculum implementation?
    - Are funds available for curriculum purchase and implementation?
    - Identify needed changes that require a cost in dollars, time, or effort – staff, facility, professional development, class schedule, child assessment.

The next section is material for content analysis (how well does the curriculum cover the components of what children should know and be able to do). This is formatted as a checklist framed from six national physical education standards that are listed and explained in brief immediately following the checklists.
The checklist looks at several critical components and features four components: fundamental movement skills, specialized movement skills, combination of movement skills, and application of skills.

Does the curriculum include: S1 YES NO

Lessons on fundamental movement skills: (locomotor -walk, skip, hop) (Nonlocomotor – bend, twist, rock) and (Manipulative – striking an object)		
Lessons on motor skills – rolling, transfer of body weight to one leg, or rhythmic movement		
Lessons on combinations of movement and motor skills – dribbling a ball while walking, creating movement patterns – different speed, direction, skill		
Initial and follow-up learning experience – intro to basic skill and then partner or additional support		

Does the curriculum include: S2

Lessons on critical features of motor skills – personal space, body awareness, and differences between locomotor movements – run, walk, skip, hop, gallop		
Lessons on movement concepts, relationships of movement – (in, out, under, over, through), effort, time, space – (paths, ranges, and direction)		
Lessons on mechanics of movement – balance, role of muscles in body movements, force absorption, and basic throwing mechanics		
Lessons on motor learning and motor development concepts – (striking with equipment and striking with hand; control movements, practice of a variety of skills		

Does the curriculum include: S3

Lessons that teach children difference between moderate and vigorous physical activity and encourage participation in MVPA		
Lessons that stress importance of allowing children to choose specific forms of PA and/or modify activities participating in outside of program		
Lessons that allow children to understand the temporary and lasting health-related benefits (healthy heart, good feelings, strong muscles)		
Variety of lessons that allow children to participate in activities that involve locomotion, nonlocomotion, and manipulation of objects (tossing balls, juggling)		

Does the curriculum include: S4

Lessons about the body's response to PA (increased heart rate, faster breathing, sweating)		
Lessons about developing basic knowledge of components of health-related fitness (cardiorespiratory, muscular endurance, muscular strength, flexibility, and body composition)		
Lessons about concept of personal choices in PA and how they contribute to physical fitness		
Lessons that allow children to participate in vigorous, intermittent PA for short periods of time during program		

Does the curriculum include: S5

Lessons that address cooperation, teamwork, and personal responsibility (sharing space and equipment, working with others, learning by doing, practicing specific skills to improve self-confidence, and resolving conflict through positive mechanisms		
Lessons that stress importance of establishing rules, etiquette, and procedures for games and PA time		
Lessons that allow teachers to teach and discuss importance of safety issues for PA activities		
Lessons that address respect for individual difference as well as importance of engaging with individuals with disabilities and/or special health care needs		

Does the curriculum include: S6

Lessons that teach children the benefits of accepting new challenges in PA		
Lessons that allow students to express feelings toward PA, identify the PA they enjoy and interactions they enjoy with others		
Lessons that allow teachers to teach and discuss importance of self-expression through movement (artistic concepts of movement, expression of feelings about PA through movement)		
Lessons that address role of PA throughout history – different cultures		

***Standard 1*: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.**[1]

Mastering movement fundamentals establishes a foundation to facilitate continued motor-skill acquisition and gives children the capacity for successful and advanced levels of performance to further the likelihood of participation on a daily basis.

***Standard 2*: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities**.[1]

Facilitating the ability of the learner to use cognitive information to understand and enhance motor-skill acquisition and performance enhances the child's ability to use the mind to control or direct performance. Application of concepts from disciplines (motor learning and development, sport psychology, sociology, and biomechanics and exercise physiology) enhances the likelihood of independent learning and therefore more regular and effective participation in physical activity.

***Standard 3*: Participates regularly in physical activity**.[1]

Connection to programs with physical activities to the lives of children outside programs is critical to developing an active, healthy lifestyle that could help prevent a variety of health problems among future generations of adults. Intent is for children to establish patterns of regular participation in meaningful physical activity.

***Standard 4*: Achieves and maintains a health-enhancing level of physical fitness**.[1]

Expectations for child's fitness level should be established on a personal basis. Comparing children to children or setting single standards for all children at a given age range are not appropriate and should take into account variation of entry level.

***Standard 5*: Exhibits responsible personal and social behavior that respects self and others in physical activity settings.**[1]

Developing respect for individual similarities and differences through positive interaction among children in physical is key to this standard. Similarities and differences include characteristics of culture, ethnicity, motor performance, disabilities, physical characteristics, gender, age, race, and socioeconomic status.

***Standard 6*: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.**[1]

Physical activity provides opportunities for self-expression and social interaction and can be enjoyable, challenging, and fun. Benefits develop self-confidence and promote positive self-image.

Centers for Disease Control and Prevention. *Physical Education Curriculum Analysis Tool*. Atlanta, Georgia, 2006.

[1] *Moving Into the Future: National Standards for Physical Education, 2nd Edition* (2004), National Association for Sport and Physical Education (NASPE), an association of American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD), 1900 Association Drive, Reston, Virginia 20191-1598.

RESOURCE LIST FOR PHYSICAL ACTIVITIES

American Academy of Pediatrics sites on Physical Activity
http://www.aap.org/healthtopics/physact.cfm

Best Practices for Physical Activity: A Guide to Help Children Grow Up Healthy
http://healthykidshealthyfuture.com/compendium

*Child Care Providers/Physical Activity: Young Children
http://healthymeals.nal.usda.gov/nal_display/index.php?info_center=14&tax_level=1

*Color Me Healthy
http://healthymeals.nal.usda.gov/schoolmeals/Resource_Cafe/Resource_Details.php?ID=8560876

Eat Smart. Play Hard
http://teamnutrition.usda.gov/Resources/eatsmartmaterials.html

Exercise for Children
http://www.nlm.nih.gov/medlineplus/exerciseforchildren.html

Fit Source Interactive Web Site
http://nccic.org/fitsource

Go Out To Play
http://www.cdc.gov/ncbddd/actearly/partners

Healthy Habits for Life (In Partnership with Nemours, Kids Healthy Sesame Workshop) http://healthykidshealthyfuture.com/compendium/

*Healthy Habits for Life Child Care Resource Kit
http://www.nemours.org/content/dam/nemours/www/filebox/service/preventive/nhps/sesamestreet.pdf

*Head Start Body Smart www.headstartbodystart.org

*Keystone Kids Go! http://www.panen.org/keystone-kids-go-active!

*New York State Department of Health Curriculum
Fitness is Fun. Choose Your Fun.
http://www.health.state.ny.us/prevention/nutrition/cacfp/ewphccs_curriculum/index.htm

*Physical Activities and Healthy Snacks for Young Children
http://www.iowa.gov/educate/index.php?option=com_content&view=article&id=431:team-nutrition-learning-tools&catid=440:nutrition-program-learning-tools&Itemid=446

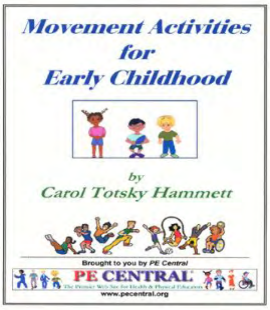
*Setting the Stage: Nutrition and Physical Activity Lessons for Childhood Settings
http://healthymeals.nal.usda.gov/schoolmeals/Resource_Cafe/Resource_Details.php?ID=367

* *Indicates the website contains activities or sample lesson plans for movement and physical activity*.

PRESCHOOL PHYSICAL ACTIVITY CURRICULUM RESOURCES

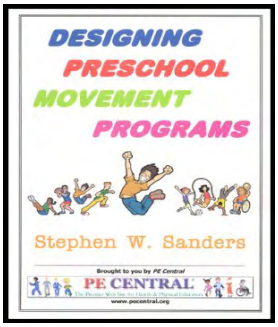
Movement Activities for Early Childhood Book

This collection of 100+ child-tested movement activities makes learning new skills fun for preschoolers. It makes teaching them easy too! Carol Totsky Hammett, an authority on early childhood physical education, divides the activities into four areas of movement: locomotor skills, ball-handling skills; gymnastics skills; and rhythmic activities. For the three skill areas, Hammett presents a "movement framework" that includes a list of skill themes and a list of movement concepts. She details how the themes and concepts can be combined in different ways to adapt the activities to the specific needs and development levels of different children. Every activity is presented in an easy-to-use format that includes an outline of the skills emphasized, objectives, procedures, equipment, teaching hints, variations, and safety considerations. Originally published in 1992 by Human Kinetics. Republished by PE Central. 2006. 130 pages.



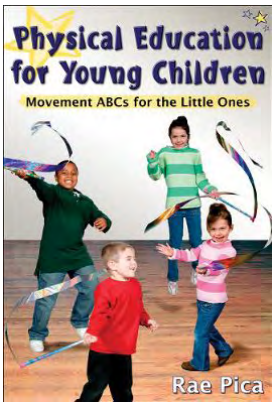
Designing Preschool Movement Programs Book

This book will help you develop and run a successful movement program for children ages 3 through 5. It's both a detailed guide for developing a curriculum and a resource for containing developmentally appropriate movement activities. Part I emphasizes the importance of movement in educating young children and tells how early exposure to structured movement activities benefits children throughout their lives. Part II contains nearly **100 developmentally appropriate activities** which are organized by skill themes. Part III brings it all together, organizing the movement activities into a curriculum, complete with sample lesson plans. Book is authored by Steve Sanders who is PE Central's Preschool Managing Editor. 138 pages. Published 1992.



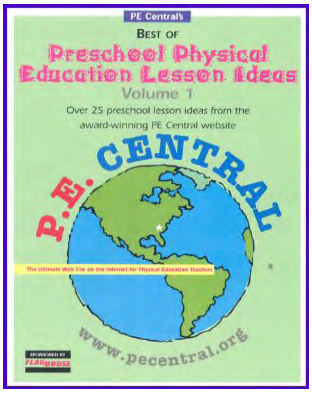
PE for Children: Movement ABCs for Little Ones

"What am I supposed to do with the little ones?" is a common question from many PE teachers. Rae Pica comes to your aid as she answers this question in this book. The book provides teachers with the following tools: a logical progression of movement skills, including the ABCs of movement, body-part identification, and nonlocomotor, locomotor, and manipulative skills, awareness of the elements of movement: space, shape, time, force, flow, and rhythm; an understanding of the developmental differences between younger students and their older counterparts, guidance in understanding the unique needs of 4- to 8- year-olds and writing developmentally appropriate lesson plans to meet those needs while making connections across the curriculum, and included are many activities that develop motor skills, manipulative skills, fitness, and the understanding of the elements of movement. Lastly, this book offers guidance in teaching across subject areas to provide an interdisciplinary approach, offers sample lesson plans to meet the unique needs of the little ones, and lists resources for children's music, equipment, and props. 131 pgs. 2008.



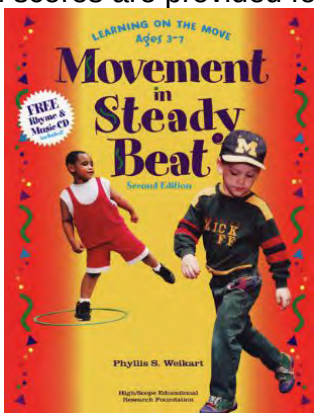
Preschool Lesson Ideas Vol. 1 (Aug. 96-June 03)

This 54 page spiral bound book features **29 Preschool Physical Education Lesson Ideas** printed directly from the pages of PE Central. Content areas include pathways and directions, balancing, body and space awareness, throwing and catching, striking with implements, jumping and landing, transferring weight, and kicking and punting. In addition, we have included **29 Frequently Asked Questions** about various preschool physical education topics answered by our Preschool PE Expert and Section Manager, Dr. Steven Sanders a professor at Tennessee Tech University in Cookeville, TN.



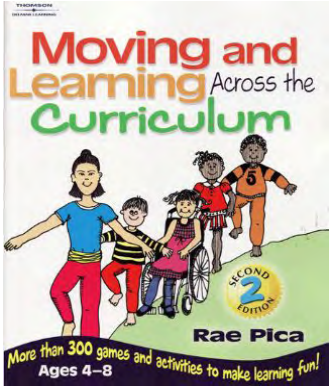
Movement in Steady Beat (PreK)

The activities in this fully revised edition will keep children ages 3–7 moving to the beat and loving it! Infant-toddler caregivers as well as preschool and kindergarten teachers will find this book to be a rich source of ideas for exciting and enjoyable movement experiences for young children. The attached CD contains rhymes (recited by author Phyllis Weikart) and action songs for many of the activities in the book. An easy-to-follow plan is given for each activity and includes suggested ages, movement key experiences, curriculum concepts, materials, steps for each part of the activity, questions to extend children's understanding, and extension ideas for creative variations. Musical scores are provided for each song as well. 2003.



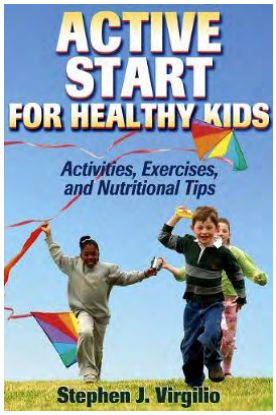
Moving and Learning Across the Curriculum 2nd Ed. (Ages 4-8)

Moving and Learning Across the Curriculum: More Than 300 Activities and Games to Make Learning Fun is now out in its' 2nd edition. Movement is the young child's preferred method of learning. This is because when a child physically experiences concepts, they understand them more completely and retain the information longer. Retention has been proven to increase when children's senses are involved in the learning process, and this book provides hundreds of activities that help to teach major concepts in the content areas of art, language arts, math, music, science, and social studies. This book will show the early childhood professional how to educate the whole child, covering all of the domains of child development which include physical, social/emotional, and cognitive. This book features detailed lesson plans, outdoor alternatives, updated resources, and enhanced "curriculum connectors" with additional suggestions for children's literature and music. Author: Rae Pica. 281 pgs. 2006.



Active Start for Healthy Kids

When it comes to physical activity and proper nutrition, young children need more encouragement and structure than ever before—especially in a culture inundated by video games, television, and fast food. Active Start for Healthy Kids: Activities, Exercises, and Nutritional Tips contains a wealth of fun, easy-to-implement activities that are specifically designed to teach 2- to 6-year-old children important health concepts. With this book as your guide, you can reach children in their formative years and help them develop positive behaviors that will last a lifetime. The book contains more than 50 developmental exercises and activities for flexibility, muscular fitness, and cardiorespiratory endurance along with 20 fun family physical activities, 16 motor skill activities, 21 yoga poses and games, and 18 dance/rhythm activities. Help children engage in exercise that will benefit them for years to come. 2005. 240 pgs.



Color Me Healthy

Color Me Healthy is a program developed to reach children ages four and five with fun, interactive learning opportunities on physical activity and healthy eating. It is designed to stimulate all of the senses of young children: touch, smell, sight, sound, and, of course, taste. Through the use of color, music, and exploration of the senses, Color Me Healthy teaches children that healthy food and physical activity are fun.

Color Me Healthy is a partnership between NC Cooperative Extension and the NC Division of Public Health (Physical Activity & Nutrition Branch and Nutrition Services Branch). Color Me Healthy is in support of Eat Smart, Move More...North Carolina.

1. What is Color Me Healthy?

Color Me Healthy is a program developed to reach children ages four and five with fun, interactive learning opportunities on physical activity and healthy eating. It is designed to stimulate all of the senses of young children: touch, smell, sight, sound, and, of course, taste. Through the use of color, music, and exploration of the senses, Color Me Healthy teaches children that healthy food and physical activity are fun. Color Me Healthy is designed to be used in family daycare homes, Head Start classrooms, and childcare centers serving 4 and 5 year olds. However, some kindergarten classrooms in the school setting also use Color Me Healthy.

Color Me Healthy Kit Includes:

- Teacher's Guide
- 4 Sets of Picture Cards
- 3 Classroom Posters
- CD with 7 Original Songs
- Hand Stamp
- 2 Parent Posters
- 14 Reproducible Parent Newsletters

Spanish Materials include:
Picture Cards, 1 Classroom Poster, 13 Reproducible Parent Newsletters and 2 Parent Posters

ORDER FORM

Color Me Healthy is a program designed to reach children ages four and five. It provides fun, innovative, interactive learning opportunities on physical activity and healthy eating. The program is designed to stimulate all of the senses of young children: touch, smell, sight, sound, and, of course, taste. Color Me Healthy uses color, music, and exploration of the senses to teach children that healthy food and physical activity are fun!

Name _____

Email _____

Organization _____

Phone _____ FAX _____

Address _____

City _____ State _____ Zip _____

MATERIALS

- **Color Me Healthy Kits are $80 per kit for orders under 100 kits.** (Orders over 100 are $65 per kit.)
- **Spanish Materials are $25 per set for orders under 100 sets.** (Orders over 100 are $20 per set.)
- **Additional Color Me Healthy Music CDs are $10 per CD.** (Orders over 100 are $5 per CD.)

Please send me _____ Color Me Healthy Kits @ _____ plus $2 shipping per kit _____ **Total** _____

Please send me _____ Spanish Sets @ _____ plus $1 shipping per set _____ **Total** _____

Please send me _____ Music CDs @ _____ plus $1 shipping per CD _____ **Total** _____

TRAINING MANUALS

Training Manuals are available to assist professionals who will be training child care providers or Head Start teachers in the use of Color Me Healthy. Each Training Manual contains:

Training Presentation in PowerPoint • Color Me Healthy Clip Art • Participant Certificate • Sample Training Agendas • Marketing Materials • CD with all files • Evaluation Forms

Please send me _____ Training Manuals @ $100 each, plus $2 shipping per manual **Total** _____

TRAINING

The Color Me Healthy Development team believes strongly that your implementation of Color Me Healthy will be enhanced by training. The authors are available to come to your state to offer a train the trainer workshop. This workshop will prepare participants to offer training for child care providers and Head Start teachers. Contact Carolyn_Dunn@ncsu.edu 919.515.9142 for details.

Make checks payable to NC State University.
Purchase orders are also accepted. We cannot accept credit cards.
Mail order form and check or purchase order to:
Box 7606, NCSU, Raleigh, NC 27695, ATTN: Carolyn Dunn

TOTAL ENCLOSED _____

Please allow 2 weeks for kits to be shipped once your order is received.

SPARK Early Childhood Curriculum Manual:

Developed through research with San Diego State University, the University of Tennessee, Memphis, Memphis City Schools, and the Catawba reservation in South Carolina. Designed specifically for the preschool teacher, this is a practical document presented in a simple and easy-to-use format. Over 400 pages of dynamic, musical, and academically integrated activities are sectioned into 12 instructional units (e.g., Movin' Magic, Fancy Feet, Silly Scarves and Streamers, etc.). Each unit is presented in scope and sequence via engaging daily lesson plans. SPARK activities "build-in" helpful management and organization tips with brief, scripted lessons presented in a "read-to-the-children" format. SPARK EC is easy to learn, easy to teach and FUN for everyone!

Instructional Materials Order Form
Easy as 1–2–3!

1 Choose the Instructional Materials you want, and multiply by the quantity to find the subtotal

Item Number	Description	Price	Qty.	Sub Total
9-1285140-201	6-8 Physical Education	$99.99	x	
9-1285138-201	Early Childhood	$99.99	x	
9-1285139-201	After School	$99.99	x	
9-1289865-201	Set of K-2 Physical Education w/Instructional Media Disc + K-2 Music CD *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$199.99	x	
9-1278050-201	Set of 3-6 Physical Education w/ Instructional Media Disc + 3-6 Music CD *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$199.99	x	
9-1303150-201	Set of K-2 Physical Education w/ Instructional Media Disc + K-2 Music CD + K-2 SPARKfolio *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$299.99	x	
9-1278341-201	Set of 3-6 Physical Education w/ Instructional Media Disc + 3-6 Music CD + 3-6 SPARKfolio *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$299.99	x	
Item Number	**Additional Materials**	**Price**	**Qty.**	**Sub Total**
9-1288447-201	K-2 Music CD	$49.99	x	
9-032323-201	3-6 Music CD	$49.99	x	
9-1301930-201	K-2 SPARKfolio of Instructional Media/Materials *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$164.99	x	
9-1272204-201	3-6 SPARKfolio of Instructional Media/Materials *(Purchase includes 1 year of access to SPARKfamily.org. Must provide email to receive access.)*	$164.99	x	

MERCHANDISE SUBTOTAL

Contiguous 48 States: *Add 15% for Shipping & Handling (minimum of $7.95). FREE for orders over $99.00*
HI, AK, & US Territories: *Parcel only shipping (7 & 9 Prefix); 20% or $15 minimum charge, whichever is greater*

Add Applicable Sales Tax or If tax exempt, please provide tax exemption # or attach your State Tax Exemption Certificate:
(all states except AK, DE, MT, NH, OR)

ORDER TOTAL

2 Choose your Method of Payment

Check or Money Order made payable to:
The SPARK Programs (Tax ID#: 39-0971239)

Check Number _____

Purchase Order Number

Type of Credit Card _____

Credit Card # _____

Expiration Date _____

Exact Name on Card _____

Signature _____

Ordering Information

Questions?	1-800-SPARK-PE
By Fax:	920-993-4375
By E-mail:	spark@schoolspecialty.com
By Mail:	Send order & payment to: The SPARK Programs 438 Camino Del Rio South, Suite 110 San Diego, CA 92108

Already a SPARKfamily member? Yes ____ No ____

Prices include lifetime consultation and support from SPARK!

3 Enter your Billing and Shipping Addresses

Billing Address

Name _____
Agency Name _____
Address _____
City _____
State _____
Zip _____
Daytime Phone # _____
E-Mail Address _____

Shipping Address (if different than Billing)

Name _____
Agency Name _____
Address _____
City _____
State _____
Zip _____
Daytime Phone # _____
E-Mail Address _____

- Please allow up to 3 weeks for delivery
- Please supply an e-mail address; once your order is processed you will receive an order confirmation by e-mail.
- Please provide physical shipping address; will not deliver to PO boxes
- If shipping to International destinations, contact SPARK for current shipping rates.
- Once books are purchased in the quantity requested, SPARK cannot take them back and provide refund.
- Please do not provide a credit card number in your e-mail message!! The internet can be a wonderful tool, but unencrypted e-mail is not secure enough to protect your credit card number. We want you as a customer, but we don't want you in a position where you might give up important, private data like your credit card number.

For Internal Use Only

Order #: _____

Customer #: _____

Toolbox

AAHPERD Home > Head Start Body Start > Toolbox

Activity Ideas for Early Childhood Development

Welcome to the Head Start Body Start Toolbox!Head Start Body Start National Center for Physical Activity and Outdoor Play is dedicated to providing resources to assist Head Start teachers and families to promote and practice physical activity, outdoor play, and healthy eating.

The Toolbox features a variety of resources that meet the national standards for infant and early childhood physical activity and are aligned with Head Start Outcomes.

Explore our numerous Toolbox activities and resources.

- Get Moving Today Activity Calendar
- Featured Activity
- Healthy Homes
- Head Start Body Start Radio
- Best Practices
- Nutrition
- Online Learning

- 10 Tips to Enhance the Environment
- 15 Simple Ways to Get Moving
- Moving With Pool Noodles
- Moving With Hula Hoops
- Moving With Beach Balls
- Outdoor Play Benefits

2010 Head Start Body Start **www.headstartbodystart.org**

1900 Association Drive • Reston, VA 20191-1599 • 703.476.3454

Head Start Body Start is brought to you by the American Association for Physical Activity and Recreation (AAPAR) and the National Association for Sport and Physical Education (NASPE) with funding from the Office of Head Start, Administration for Children and Families, U.S. Department of Health and Human Services.

July 2010
Get Moving Today Activity Calendar

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Duplicated with permission from Head Start Body Start (HSBS). For more information about quality K-12 physical education visit www.naspe.org. For more information about lifelong and inclusive physical activity visit www.aapar.org.				**1** Pretend to go on a trip today – drive your car, fly in an airplane, ride a motorcycle, and paddle a boat. Really use your muscles.	**2** Find a bouncy ball and practice bouncing and catching. Bounce it off the ground or off of the side of a building.	**3** Play throwing golf – take turns throwing a ball toward a big target. How many throws does it take to get there? Pick a new target.
4 Have fun in the water today – really try to use all of your muscles.	**5** Help your family with a chore around the house that uses lots of your muscles, such as washing the car, sweeping out the garage, or pulling weeds.	**6** Practice your throwing skills. Step at your target and follow through toward your target.	**7** Find something to climb – make sure you ask your family first.	**8** Draw different shapes with sidewalk chalk and practice moving over, around, and into them.	**9** Get your body wet and then lay down on the driveway. When you get up you will see an impression of your body. Practice jumping over yourself.	**10** Plan a family fitness day. Let everyone choose one activity and then do all of them together today.
11 Balance on different items around your house. Can you hold your body really still?	**12** Plan a day to go to a swimming pool this month – either today or in the next few days. 	**13** Play Add On Movement Fun- do one movement, then your partner repeats it but adds on one more, then you do your first movement, your partners and then add on.	**14** Ask someone to take you to a park. Play on every piece of equipment.	**15** Set up a sprinkler and have fun running through it. Try running around the house after every trip through the sprinkler.	**16** Throw into a target. Find different sized boxes and practice throwing into each of them. Try it near and far.	**17** Before you go to bed tonight – lie on the floor and as you breathe try to make every muscle tight and then every muscle relaxed.
18 Set up a variety of targets – bottles, cans, buckets. Then work on throwing at them from different distances.	**19** Set up those same targets as yesterday but today work on kicking at them from different distances.	**20** Get your feet wet and make tracks on the sidewalk. Try taking big steps and then small steps.	**21** Practice galloping today – remember to keep the back foot behind the front foot. Can you clap or snap your fingers?	**22** Make a paper kite, attach a string and run around the yard making it fly behind you.	**23** Rake the yard or help your family pull weeds.	**24** Walk or run around your house as you sing your favorite song.
25 Make a musical instrument and have your own parade.	**26** Find 3 different things that you can jump over that are each a different height.	**27** Set up an obstacle course using things to jump over, go around, and under. See how fast you can do the entire course.	**28** Make up a new game today using an empty plastic bottle and a ball.	**29** As soon as you get up today – do 10 jumps, 10 reaches, 10 twists, and 10 crazy moves.	**30** On the 10th you were asked to plan a family fitness day – have you?	**31** Find your favorite activity from this month and do it again.

August 2010
Get Moving Today Activity Calendar

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Plan an afternoon of physical activity. Let everyone decide one thing that they would like to do with the rest of the family.	**2** Practice bouncing a ball. Can you bounce it really high? Can you bounce really low? Can you bounce it so it travels behind you?	**3** How far can you kick a ball? Kick it hard, chase it, run back and kick it again.	**4** Practice your hopping skills. Take off and land on the same foot. How many times can you hop in a row? Can you hop with both feet?	**5** Spread out a beach towel – move around it, over it, beside it, on it, then under it.	**6** Hit a beach ball high into the sky and chase it as it flies through the air. 	**7** A day to stretch your body in all different shapes and directions. Try to hold each stretch until you count to 5.
8 Make up a yoga pose for your favorite animals. Do each pose as you relax and breathe.	**9** Play hide and seek with a friend or family member.	**10** Sweep the sidewalk or driveway for your family. Work hard and use those muscles.	**11** Using paper plates try to see how far you can make them fly. What is the best way to toss it to make it go far?	**12** Use your fine motor skills today – clean some vegetables and enjoy a treat.	**13** Play Kick Golf – pick a target, take turns kicking until you hit the target and then pick a new goal.	**14** Put a water hose on a plastic tarp – have fun slipping, sliding and jumping in the puddles.
15 Play catch. Follow the ball with your eyes and then move your hands, arms and body to meet the ball.	**16** Using 'stuff' from around the house create a tunnel – have fun moving through it in different ways.	**17** Write some letters on the driveway with a wet sponge – then jump or leap over each letter.	**18** Take 2 minutes before going to bed tonight to stretch and relax as a family.	**19** Another day for your fine motor skills – cut up chunks of fruit and put them onto a wooden skewer – then eat!	**20** Pretend to be a butterfly that is flying around your yard from flower to flower. Dart, dip, swoop, and soar.	**21** Make up a new game with your family. Give it a name and have fun playing it together.
22 Work on throwing a ball hard and far. Each time try to throw it a little bit further.	**23** Pretend to move like different foods – melt like a popsicle, pop like popcorn, scramble like eggs, and slither like spaghetti.	**24** Work on your underhand tossing skills. Find some small objects to toss into a box. Keep backing up.	**25** How many different ways can you move your body? Have about shiver, tumble, waddle, bounce, float… what else?	**26** Make up a movement pattern - try jump, jump, wiggle, jump, jump wiggle. Your turn!	**27** Find a hill to run up and roll down. Go up in a different way and come down in a different way.	**28** Go for a hike and pick up trash then toss the trash into a basket.
29 Work on your striking skills by hitting a pitched ball. Keep your eye on the ball.	**30** Make up a Movement Story and then act it out!	**31** Go back and find your favorite activity and do it again.			**Duplicated with permission from Head Start Body Start (HSBS). For more information about quality K-12 physical education visit www.naspe.org. For more information about lifelong and inclusive physical activity visit www.aapar.org.**	

www.headstartbodystart.org

CATCH® Early Childhood

CATCH Early Childhood (CEC) is designed to nurture a love of physical activity, provide an introduction to classroom-based gardening and nutrition, and encourage healthy eating in children ages 3-5.

Modeled after the nationally recognized CATCH Program, CEC provides an environment where physical activity, health education, gardening and healthy eating behaviors are valued and taught.

Little ones are motivated to walk, run, jump, dance and move their whole bodies while playing and having fun!

CEC PROVIDES TEACHERS AND PE SPECIALISTS WITH:

- Tools to successfully develop and implement a fun nutrition and PE/activity program
- Convenient and flexible lesson plans featured in a manual with removable pages for easy duplication and sharing
- A sample schedule to aid in lesson planning
- Activity cards that promote moderate-to-vigorous physical activity (MVPA)
- Relaxation and stretching exercises to assist with cool-downs and transition back to the classroom
- A music CD that keeps the class motivated, moving, and having fun
- Parent tip sheets to take home that encourage family involvement

CEC PROVIDES CHILDREN WITH:

- Games and activities that foster a love of exercise
- The opportunity to refine developing locomotor, non-locomotor and manipulative skills
- Knowledge to identify basic healthy food choices
- Music to sing and dance along to
- Hands-on gardening experiments
- Snack activities for hungry bellies
- Hand puppets and cartoon characters that make learning fun

CATCH®

CATCH EARLY CHILDHOOD KIT INCLUDES:

- 9 nutrition-based and 10 gardening-based classroom lessons to encourage healthy eating behaviors
- 120 activities with music aimed at promoting physical activity
- English/Spanish Parent Tip Sheets that provide a coloring activity, additional nutrition and physical activity information, and recipe ideas for parents
- Extension Activities aimed at promoting repetition of nutrition messages
- Curriculum Connectors to extend lessons into other learning centers such as language, math, and science
- An adaptive learning component to meet the needs of children with physical or learning disabilities
- A list of Spanish and French translations of "key words" from lesson plans to expand children's knowledge and facilitate instruction in bilingual classrooms

CATCH EARLY CHILDHOOD "IT'S FUN TO BE HEALTHY" MANUAL & ACTIVITY BOX

A fully comprehensive curriculum that features "It's Fun to Be Healthy" Teacher's manual, English/Spanish Parent Tip Sheets, and an Activity Box with all of the supporting instructional lessons you need for over 260 activities to get little ones up and moving (includes music CD).

Ask about our curriculum and equipment set options.

The CATCH Early Childhood Program was developed by:

- CATCH Curriculum Writer, Susan Luton
- Children's Physical Activity Specialist, Rae Pica
- A team at the University of Texas led by Shreela Sharma, PhD, RD, LD
- Pre-K Music and Movement Specialist, Stasie Shirey Veinotte

"The CATCH Early Childhood program is unique because the classroom curriculum includes stories with puppets and activities that really resonate with 3, 4 and 5 year old children. Lessons share important nutrition concepts and are crafted so that they can be used in any preschool learning center. Children have fun as they learn about healthy eating; and the PE activities, which come with music, keep kids and teachers moving and singing."

—Shreela Sharma, PhD, RD, LD
Assistant Professor of Epidemiology, Assistant Director, Dietetic Internship Program,
Michael and Susan Dell Center for Advancement of Healthy Living,
The University of Texas, School of Public Health

Ask about our CATCH Training!

Call us at 800.793.7900 and speak to a CATCH Team member today!

SAMPLE PRESCHOOL DAILY SCHEDULE

6:00 am Arrival – greet families and children, select an activity

8:00 am Breakfast

8:30 am Group Meeting
- Talk about day's activities – choices for the morning
- Fingerplay, Story, Poem, Movement Song/Rhythm
- Music and Movement Activity/Stationary Physical Movement

9:00 am Choice Time and Small Groups – Interest areas

9:45 am Cleanup

9:50 am Group Meeting
- Music and Movement Activity/Physical Movement
- Record Ideas of what children did or write experience story

10:15 am Outdoor Time
- Teacher-led Physical Activity – ½ hour
- Choice Time – ½ hour Observe and interact with children

11:15 am Clean up and Story Time
- Movement Song/Rhythm

11:30 am Lunch

12:15 pm Rest Time

2:15 pm Snack and Quite Activities

2:45 pm Group Activity Transition
- Read aloud
- Movement Song/Rhythm

3:00 pm Outdoor Time
- Teacher-led Physical Activity – ½ hour
- Choice Time – ½ hour Observe and interact with children

4:00 pm Choice Time and Small Groups
- Interest Centers

5:00 pm Closing and Departure

SAMPLE A TODDLER'S (Two's) DAILY SCHEDULE

6:00 am Arrival – greet families and children, select an activity

8:00 am Breakfast

8:30 am Group Meeting
Talk about day's activities – choices for the morning
Fingerplay, Story, Poem, Movement Song/Rhythm
Music and Movement Activity/Stationary Physical Movement

9:00 am Choice Time and Small Groups – Interest areas

9:45 am Cleanup

9:50 am Group Meeting
Music and Movement Activity/Physical Movement
Record Ideas of what children did or write experience story

10:15 am Outdoor Time
Teacher-led Physical Activity – ½ hour
Choice Time – ½ hour Observe and interact with children

11:15 am Clean up and Story Time
Movement Song/Rhythm

11:30 am Lunch

12:15 pm Rest Time

2:15 pm Snack and Quite Activities

2:45 pm Group Activity Transition
Read aloud
Movement Song/Rhythm

3:00 pm Outdoor Time
Teacher-led Physical Activity – ½ hour
Choice Time – ½ hour Observe and interact with children

4:00 pm Choice Time and Small Groups
Interest Centers

5:00 pm Closing and Departure

SAMPLE B TODDLER'S (Two's) DAILY SCHEDULE

7:00 am	Arrival – greet families and children, select an activity
9:00 am	Snack
9:20 am	Group Meeting Talk about day's activities – choices for the morning Fingerplay, Story, Poem, Movement Song/Rhythm Music and Movement Activity/Stationary Physical Movement
10:00 am	Outdoor/Indoor Time Large Motor Activity Teacher-led Physical Activity – ¼ to ½ hour Choice Time – ½ hour Observe and interact with children
11:00 am	Clean up for Lunch
11:15 am	Lunch
12:00 pm	Rest Time
2:15 pm	Snack and Quite Activities
2:45 pm	Group Activity Transition Read aloud Movement Song/Rhythm
3:00 pm	Outdoor Time Teacher-led Physical Activity – ¼ to ½ hour Choice Time – ½ hour Observe and interact with children
4:00 pm	Choice Time and Small Groups Interest Centers
5:00 pm	Closing and Departure

SAMPLE FAMILY CHILD CARE DAILY SCHEDULE

6:00 am Arrival – greet families and children, select an activity

8:00 am Breakfast

8:30 am Choice Time and Small Groups – Interest areas

10:30 am Outdoor Time
Teacher-led Physical Activity – ½ hour
Choice Time – ½ hour Observe and interact with children

ADJUSTMENTS
8:30 - 10:30 am MWF – Child-directed free play to meet child's individualized goals/needs
Group or solitary play
9:00 – 10:30 am TTH – Teacher-directed time
Stories, arts, crafts, singing, music/movement, active games, finger plays, experiments/discovery, etc.
Activities may be inside or outside weather permitting in the time frame

11:00 am Lunch

12:00 pm Rest Time and quiet time puzzles, books, manipulative, computer, art

2:00 pm Child-directed free play, group or solitary (manipulative bins, sand/water Sensory/discovery bottles, puzzles, art, handwriting, stories, feltboard, puppets, climbing, dance, active games, dramatic play, blocks, cars & trucks, or snuggling

3:00 pm Snack and Quite Activities

3:30 pm Outdoor Time
Teacher-led Physical Activity – ½ hour
Choice Time – ½ hour Observe and interact with children

4:30 pm Choice Time and Small Groups

5:00 pm Closing and Departure

Dramatic Play

Blocks

Library (Writing/Listening)

Computer/Cooking

Outdoors

Sensory Table

Table Toys

Theme

Physical Activity

Music and Movement

Routines / Self-Help Skills

Art

Sand and Water

Group Times/Small & Large

Weekly Lesson Plan Form

Planning Changes to the Environment

Week of: _____ Study/Project: _____

Classroom _____

Blocks	Dramatic Play	Toys and Games	"To Do" List
Art	Library	Discovery	
Sand and Water	Music and Movement	Computer/Cooking	
Physical Activity	Outdoors	Family/Community Involvement	

***Weekly Lesson Planning Form,* continued**

	Monday	Tuesday	Wednesday	Thursday	Friday
Group Time (songs, stories, games, discussions, etc.)					
Story Time					
Small-Group Activities					
Special Activities (field trips, special events, etc.)					
Physical Activity Teacher-led					

Notes *(reminders, changes, children to observe)*

Weekly Planning and Observation Form

Teacher(s)_____ **Week of_____** **Observation Focus:**	**Individual Goals / Child Initials:**	**Group Goals:** **Area / Goal** **Area / Goal**

Planning for Interactions and Routines

	Monday	Tuesday	Wednesday	Thursday	Friday
Large Group Time					
Special Small Group Activities					
Physical Activity					
Self Care & Other Daily Routines					

Planning for the Environment: Child Initiated Choices / Center Activities

Dramatic Play	**Sensory Table**	**Library / Writing / Listening**	**Table Toys / Math**	**Science**
Music	**Art**	**Blocks**	**Computer/Cooking**	**Outdoors**

PHYSICAL ACTIVITY SPACE AND EQUIPMENT CHECKLIST

MOVEMENT OPPORTUNITIES

Implementation Scale: 1 - Not at all 2 - Partially/Mostly 3 - Fully

The existing site promotes physical activity and movement. Key features of the play space provide opportunities for children to move at varying speeds with different degrees of force and to explore ways to control their movement. They are able to move in a variety of directions and levels.

TRAVELING SKILLS		**1**	**2**	**3**	**Comments**
Walking					
Skipping					
Hopping					
Climbing					
Jumping					
Crawling					
Sliding					
Marching					
Galloping					
Running - around and in place	**DIRECTIONAL**				
Leaping	down				
MANIPULATING SKILL	up				
Throw	right				
Catch	left				
Bounce	forward				
Toss	backward				
Roll	sideways				
Kick	**LEVELS**				
Trap	low				
Open	medium				
Close	high				
Strike					
Object Handling - Lifting					
STABLIZE					
Turn					
Twist					
Squat					
Swing					

PHYSICAL ACTIVITY SPACE AND EQUIPMENT CHECKLIST

Sway				
Push				
Pull				
Stretch				
Bend				
Shake				
Dodge				
Land				
Balance				
OTHERS				
Rocking				
Stepping				
Rolling				
Flight				
Tumble/Flip				
Hang				
Pedal				
Chase				

NATURAL FEATURES

Incorporates a variety of natural elements for children to play with. Landscape contains natural elements. Natural or artificial structures provide shade to accommodate the total number of children in the classroom. Shade can be provided by a combination of the shadow of the building, shade structures, trees, pergolas, umbrellas.

Large trees				
small trees				
tree(s) that children can climb				
shrubs				
flowering plants				
variation in ground (hills, mounds)				
grassy area				
rocks large enough to climb				
a hill for rolling down or climbing up				
shaded area with room for most children in a class				

PHYSICAL ACTIVITY SPACE AND EQUIPMENT CHECKLIST

KEY FEATURES

A variety of developmentally appropriate play areas/learning settings to promote a diverse range of experiences for children. Materials and equipment included in the play space are designed and/or selected for children in the age range that are using them.

balancing surfaces (balance beams, boards, etc.)				
basketball hoop (s)				
climbing structures that cannot be moved (jungle gym, ladder)				
merry-go-round				
sandbox				
water play area (not including a water table)				
see-saw/teeter totter				
slide that cannot be moved				
swinging equipment (swings, ropes)				
tricycle track or paved area				
tunnels (fixed, not movable)				
benches				
picnic tables				
small stage or raised deck				
play house				

EQUIPMENT

A variety of developmentally appropriate materials made of manufactured materials to promote a diverse range of experiences for children.
All materials and equipment included in play space are designed an/or selected for children in the age range that are using them.
The play space has a variety of features that can be changed and/or played with in many different ways. The play space supports children being spontaneous, innovative, flexible, and creative. It supports children in solitary play as well as parallel and cooperative play.

balls - List they different types				
climbing structures (that can be moved by staff or children)				
floor play equipment (tumbling mats, etc.)				
parachute				
jumping play equipment (jump ropes, hula hoops, mini tramps)				
push/pull toys (wagon, scooters, wheelbarrow, big dump tricks, etc.				
riding toys (tricycles, cars, scooters)				
rocking or twisting toys (rocking horse, sit and spin)				

PHYSICAL ACTIVITY SPACE AND EQUIPMENT CHECKLIST

sand/water tables				
sand/water play toys (shovels, scoops, buckets)				
slides (that can be moved by staff or children				
twirling play equipment (ribbons, scarves, batons, etc.)				
small portable pool used for swimming, splashing, or other water play				
Portable tunnels (can be moved by staff or children)				

TV
DVD/VCR
Computers
Video game system (s)

CHILDCARE PHYSICAL ACTIVITY PROGRAM EQUIPMENT

Item	Description	Source of Materials	Qty	Directions Included	LOW	to	HIGH
Balance Beam	**Homemade**	Home Impr. Store		x	x		
Bean Bags	**Homemade**	Fabric Store		x	x		
Carpet Squares	**Homemade**	Carpet Store			x		
Hoops	**Homemade**	Hardware Store		x	x		
Jump Ropes	**Homemade**	Hardware Store		x	x		
Ladder	**Homemade**	Hardware Store		x	x		
Cones	**Discarded traffic cones**	Traffic/City/Cty			x		
Cones	**Homemade**	Grocery Store		x	x		
Medicine-Weighted Ball	**Homemade**	Sporting Goods		x	x		
Movement Mats	**Homemade**	Home Impr. Store		x	x		
Parachute	**Homemade**	Home Décor Store			x		
Scoop	**Homemade**	Grocery Store		x	x		
Tether Ball	**Homemade**	Home Impr. Store			x		
Tires	**Discarded**	Tire Shop			x		
Tumbling-Gymnastic Mat	**Homemade**	Funiture Store			x		
Volleyball Net	**Homemade**	Grocery Store		x	x		
Yarn Ball	**Homemade**	Fabric Store		x	x		
Manipulative Props	**Homemade**	Super Store			x		
Tossing and Catching Props	**Homemade**	Super Store		x	x		
Streamers	**Homemade**	Super Store			x		
Paddles	**Homemade**	Super Store			x		

Bats	**Homemade**	Home Impr. Store		x		x		
Batting Tees	**Homemade**	Home Impr. Store		x		x		
Self-Space Spots	**Homemade**	Super Store		x		x		
Targets	**Homemade**	Super Store		x		x		
Lifting Weights	**Homemade**	Super Store		x		x		
Tunnel	**Homemade**					x		
Tricycle/wagon		Super Store						x
Feathers		Fabric Store				x		
Plastic Balls		Super Store				x		
Beach Balls		Super Store				x		
Tennis Balls		University/Tennis				x		
Hand Air Pump		Super Store				x		

DISCOUNT SCHOOL SUPPLY 8/15/2010		Unit	Item#	Qty	Unit Price	Total		LOW	to	HIGH
Ball	Foam Balls, 4"	set/6	827FOAMBS	20	$7.99	$159.80		x		x
Ball	Best Quality Rubber Playground Balls	set/6	827RPG7SET	20	$21.99	$439.80		x		x
Activity Balls	Soccer,Football, Basket	set/3	827PLAYBALL	2	$18.99	$37.98		x		x
Foam Sport Balls	Soccer,Football, Basket	set/3	827FMBALLS	1	$14.99	$14.99		x		x
Sport Ball Bag	39x17	1	827BALLSTORE	1	$37.95	$37.95				x
Bean Bag	Colored Bean Bags	set/12	827CBB	2	$10.99	$21.98		x		x
CD	Raffi: Singable Songs for the very young	1	827SINGSONG	1	$15.99	$15.99				x
CD	Daily fitness - 4 CD Set	set/4	827MOVEMENT	1	$59.95	$59.95				x
CD	All-time favorite dances	1	827DANCE	1	$15.15	$15.15		x		x
CD	Bean Bag Activities & Skills Coordinatin	1	827BEANBAG	1	$15.15	$15.15				x
Cone	Colored Cones	set/10	827SETC	1	$ 12.95	$12.95				x
Hoop	Brawny Tough Activity Hoops (25")	set/5	827LGHOOP	2	$28.95	$57.90				x
Jump Rope	7' Nylon ropes	set/3	827RPST	4	$8.99	$35.96				x
Parachute	Parachute 20' (16 handles)	1	827P20	1	$69.99	$69.99				x
Ribbon Hoop	Swirling Streamers	set/6	827SWIRLS	4	$10.99	$43.96				x
Scarf	Juggling Scarves	set/12	827JUGGLE	2	$9.99	$19.98				x
EZ Catch	Hook and Loop	set/6	827EZCATCH	1	$18.99	$18.99				x
Scoop Ball	Scoop Ball	set/6	827-SCOOPSET	1	$37.99	$37.99				x
Discs	Soft Flying Discs	set/6	827SFDISC	1	$22.95	$22.95				x
Target Toss	Target Toss Game	set/6	827TTBB	1	$27.74	$27.74				x
Hoola Hoops	Zebra Hoops	set/6	827HULA	1	$29.99	$29.99				x

Ladder	Agility Ladder	1	827AGILITY	1	$17.95	$17.95			x
Stones	Step-a-Stones	1	827STEPSTN	1	$39.95	$39.95			x
Pods	Balance Pods	1	827PODS	1	$28.95	$28.95			x
Logs	Step-A-Logs	1	827STEPLOG	1	$49.95	$49.95			x
Stilts	Stand Tall Stilts	2	827STIL	2	$5.99	$11.98			x
Dance Bands	Rainbow Writst Bands	set/6	827RNBW	2	$8.95	$17.90			x
Dance Scarves	Dancing Scarves	set/6	827DNCSCR	2	$11.99	$23.98			x
Teeter-Totter		1	827TEETER	1	$54.95	$54.95			x
Scooter Board	Rainbow Rollers	set/6	827ROLLUS	1	$89.99	$89.99			x
Tunnel	9ft "See Me" Tunnel	1	827TUN9FT	1	$29.95	$29.95			x
GRAND TOTAL						**$1,562.69**			

EQUIPMENT: HOW TO MAKE

Balance Beam: Length may vary from 8 – 12 feet. Beam width can taper from an 8 – 10 inch wide end to a narrow end 2 – 3 inches wide. A 4X4 piece of lumber in an 8' length will work. Add to stabilizing pieces of lumber to the bottom and screw into the beam (ask to have edges gone over with a router to smooth edges) or apply indoor/outdoor carpeting or matting over the length of the beam.

Balance Boards: ½" to ¾" plywood should be used for balance board tops. Consider making three different balance boards rather than 2 or 3 boards of the same design. Different boards will challenge more children.

Beanbags: Use heavy sturdy cloth for material. Consider square sizes from 4 – 6 inches as appropriate for preschoolers. Cut in a rectangular shape, then fold once to sew. Triple stitch the sides then turn the cloth inside out to expose a smooth outside surface. Fill with dried beans or other seeds then complete sewing last side. Preschoolers will also benefit from handling beanbags that are shaped as letters, numbers and geometric forms.

Bowling Pins: Half gallon plastic bleach bottles with 2 or 3 inches of sand inside for weighting or 3 inch potato chip canisters can serve as homemade bowling pins.

Climbing Rope: Select a rope diameter of one to 1½ inches. If you can knot the bottom half of your rope every child can have some success when attempting to climb. Knots should be placed 9 inches apart. Place knots on only half of the rope so children can experience both the support as well as the challenge of a smooth rope climb.

Floor Hockey Sticks and Pucks: Use round sponges or take a square sponge and trim off the eight corners to make a ball shape.

Hoops: From a hardware store, purchase ½ inch plastic plumbing well piping or tubing. A 9 foot cut will make one 36 inch diameter hoop. Some stores sell the tubing only in 100 foot coils. If so, purchase two 100 foot coils of ½ inch plastic water pipe and you can make approximately 20 hoops varying in size from 30 – 50 inches in diameter. A joint connector (purchased at hardware store) or wooden dowel can be used to connect each hoop. Heat both hoop ends by dipping them in boiling water, then insert the joint connector or 2 inch length of 5-8 inch dowel and allow to cool. Tape the area where the hoop ends connect. Doweling may come in 1,2, and 3 foot lengths. If so, the 2 inch dowel couplings will have to be cut from the longer lengths.

Jump Ropes – Long and Short: 3-8 to ½ inch sashcord or plow line should be purchased from a hardware store and cut in 5 to 8 foot lengths for individual short

ropes. To prevent unraveling, wrap rope ends with duct tape and cut through tape with a sharp knife. Long ropes should be cut in 10 to 16 foot lengths.

Ladder: Rails may be made from 2 by 2 inch, or 2 by 4 inch by 7 to 12 foot long boards. Rungs should be made from 2 by 2 to 1½ inch diameter, 12 to 16 inches in length. Dowel rungs may need screws and nails to fasten them securely. Space rungs 12-14 inches apart. Consider varying the distance between the rungs to provide more challenging experiences. Protect children from splinters by sanding then painting or varnishing the ladder.

Cones: City and government traffic and highway agencies will often give you discarded traffic cones. Half-gallon bleach bottles and milk containers can also be used for cones. Pour a few (2 or 3 cups) of sand or 1 or 2 inches of sand in the bottom of the cones to keep them from turning over easily.

Medicine-Weighted Ball: Make a small slit in an old unusable ball and fill it with 8 – 12 pounds of sand. Place tape over the split when sand filling is complete. Balls weighing 8 – 12 pounds seem most appropriate for preschoolers strength and carrying abilities.

Movement Mats: Purchase clear plastic carpet runners. Footprint, hand print and seat print patterns may be cut from contact paper then stuck to the carpet runner surface. Preschoolers are fascinated as they follow these patterns on the carpet runner and discover new and familiar movements.

Parachute: A 15 – 24 foot parachute works best for the preschool child. A blanket or sheet from a queen size or king size bed will also work. Military supply depots may have old round parachutes for relative inexpensive price.

Tennis Balls: May be available from universities and tennis clubs.

Scoop: Cut out the bottom of a thoroughly cleaned ½ gallon plastic bottle. Tape both the inside and outside of the cut rim. Vary your scoop design.

Tires: Old discarded automobile rubber tire carcasses can be found at most tire stores. Also look into race car tires for size difference. Decorate the tires by painting them many colors and with many designs using lacquer or water base paints. Select different size tires to give children many handling and lifting experiences.

Vaulting Box: Stack old newspapers and magazines in a cardboard box then tie and tape the box so it may be used as a vaulting box.

Wands: Saw discarded broomstick or dowels in lengths of 30 inches or less. Sand paint colorfully.

Yarn Ball:

Method one – a 70 yard skein of rug yarn is needed to make one yarn ball. Wrap yarn around a 4 inch wide cardboard square 20 times and cut from skein. Slide the yarn bundle off the cardboard square. Tie this long bundle tightly in the middle with several wraps of cotton string. One skein should make about 14 loop bundles. Tie two loop bundles together. When you have 4 – 2 loop bundles, tie them all tightly together to make one ball. Twist the 2 loop bundles into a criss-cross pattern as you tie them into larger bundles to give yarn ball more shape. Cut all bundle loops, trim, and shape.

Method two – Cut out two, 2 inch cardboard doughnuts and cut in each, a 5-8 inch center hole. Keep the circles together and wrap yarn through the center hole and around the doughnut shapes until the holes are nearly full. Insert a sharp object between the two cardboard cut-outs and cut all the yarn on the outside edges. Slide the two doughnut shapes apart and tie carefully. Remove the cardboard rings by slipping them over the tied yarn. Fluff and trim the ball until it is round.

See How They Run…A lesson Guide to Pre-school Movement Education, Joni Coe and Lee Allsbrook, 1978.

Additional Equipment Suggestions

Tossing and Catching Props:

- Washcloth tied in knot
- Scarves - Chiffon
- Pan Scrubber
- Bridal Netting
- Panty Hose Ball – Make a ring out of cut off pantyhose, ties each ring together to make a geodesic ball.

Volleyball Net

- 6 pack beverage plastic holders tied together -

Homemade Bats

- Plastic bottles (2 liter size) with screw-on-handles – Secure the dowel into at the end of the bottle with a small screw. Cover the end of the handle with a rubber furniture tip.
- Foam Noodle Bat

Commercial Bats

- Plastic bat – 30 inch length for a bat with a 3 inch diameter
  16 inch length for a bat with a 1¼ inch diameter

Batting Tees

- 1 small plunger, 1 funnel, and 12 – 18 inch of foam cover for plunger handle – noodle or pipe insulation foam, make the tee adjustable. Use a larger funnel for larger balls.
- 2 Plungers, Foam noodle

Self-Space Spots

- Pot Holders
- Computer Mouse Pads
- Kitchen Drawer Liners – spongy gripper shelf liner
- Newspaper Mats

Jump Ropes

- Bread Bags – braided together
- Large Plastic Garbage Bags – make for heavier ropes

Paddles

- Tennis racquets with handles cut down and taped
- Racquetball racquet
- Paper plate – paint mixing stick attached to back of plate
- Pantyhose Paddle – Wire hangers bent together to make circle or pear shape, twist leftover hanger length to form handle. Tape to hold hangers

together along “rims” and around twisted handle. Use two pantyhose to wrap around smoothly forming a soft net. Use thick padded tape, bike handle rubberized tape or tennis racket handle tape to wrap around the handle.

Parachute Activities

Monkey Tails – golf or tennis size whiffle balls, ribbons in 2 foot lengths and attach ribbons together with a bread bag tie. Attach the bread bag tie to one or two holes in the whiffle ball.

Dominoes

Kicking targets, used for throwing, obstacle course use
Two pieces of 1 X 2 foot Styrofoam back to back and cover with black Contac paper. Paints dominoes on contac paper.

Balance Beam

Rinse out 10 ½ gallon juice or milk containers and fold down spout end to be as flat as possible. Cut the spout out if necessary to a flat end. Fill each with shredded paper or pages of newspaper. Stuff it tight so that container will bear weight of children and not sink in when stepped on. Use duct tape to create a “finished” flat end. Use duct tape to attach several containers together to make the length of the beam. Two containers will be needed for each end of the beam. Should look like a T. Children can decorate the beam or cover it with spongy gripper shelf liner.

Barbell Weights

1, 2, or 3 liter plastic bottles. Add sand, aquarium gravel, or rice to each to level not more than half full. Lay the bottles on their sides. Insert a 36” wooden dowel or PVC plastic pipe into each bottle. Use diameter close in size to opening of the bottle top. Tape the pour spouts of the bottles to the dowel rod or PVC using colored electrical tape to make a tight seal. Decorate the bottle and the handle with electrical tape, magic marker, stickers or puff paint. Use small barbell weights to do curls or practice lifting. Do not make weights heavy for children. Props are designed to help children pretend or model healthy behaviors. Smaller sizes can begin with 12 oz., 16 oz., or 20 oz. bottles. 5/8 inch dowel or PVC cut into 18 inch length.

Targets for Kicking, Throwing, or Obstacle Courses

Plastic bottles (1, 2, or 3 liter). Put items in bottles that make sounds, add color, and sensory stimulation – bells, corn, rice, beads, confetti, tissue paper, pipe cleaners, plastic figures, foam cut outs, pompoms, wrapping ribbon. Glue the lid on.

EC Standard List

				(Based upon 20 children)	(*APPR.)	(*APPR.)
Item	**Qty**	**Unit**	**Item #**	**Description**	**Unit Price**	**Total**
Bag	1	Set/6	9-030187-201	Bag Mesh Heavy Duty 24x36	$ 69.99	$ 69.99
Ball	20	Each	9-009185-201	Softball Foam Coated Yellow	$ 3.99	$ 79.80
Ball	20	Each	9-009587-201	Ball Playground Super Safe 7"	$ 5.29	$ 105.80
Ball	1	Set/36	9-016451-201	Fluffballs 90mm	$ 13.49	$ 13.49
Ball	5	Each	9-1268772-201	Ball Beach Super Duty 16"	$ 1.59	$ 7.95
Balloons	1	Pk/144	9-003844-201	Balloon Round 15"	$ 26.99	$ 26.99
Bean Bag	2	Set/12	9-1004582-201	Bean Bag Utility /Sequencing	$ 14.29	$ 28.58
CD	1	Each	9-018472-201	Join Us Moving Please CD	$ 14.99	$ 14.99
CD	1	Each	9-052265-201	Can Cockatoos Count By Two's CD	$ 18.99	$ 18.99
CD	1	Each	9-1005019-201	Raffi In Concert CD	$ 18.99	$ 18.99
CD	1	Each	9-1005075-201	Kids In Motion CD	$ 17.29	$ 17.29
CD	1	Each	9-1005234-201	All Time Favorite Dances CD	$ 17.99	$ 17.99
CD	1	Each	9-325536-201	We All Live Together Vol. 2 CD	$ 17.29	$ 17.29
CD	1	Each	9-500450-201	Walter the Waltzing Worm CD	$ 19.99	$ 19.99
Cone	6	Each	9-716170-201	Cone Safety Vinyl 18"	$ 10.45	$ 62.70
Hoop	2	Set/12	9-005930-201	Hoop No Kink 24"	$ 54.99	$ 109.98
Hurdle	1	Set/5	9-009727-201	Hurdle Over/Under	$ 73.99	$ 73.99
Inflator	1	Each	9-708787-201	Inflator Table-Mounted	$ 35.99	$ 35.99
Jump Rope	4	Set/6	9-018573-201	Jump Rope w/ Knot End 7'	$ 16.49	$ 65.96
Markers	1	Set/24	9-017895-201	Markers Flow	$ 27.99	$ 27.99
Paddle	5	Each	9-018949-201	Paddle Lollipop	$ 9.99	$ 49.95
Parachute	1	Each	9-1004535-201	Gripstarchute 20'	$ 99.99	$ 99.99
Ribbon Hoop	4	Set/6	9-022977-201	Ribbon Rainbow Hoop 12"	$ 43.99	$ 175.96
Scarf	2	Set/12	9-1004604-201	Scarf Juggling	$ 11.99	$ 23.98
Scooter Board	1	Set/6	9-715453-201	Board Scooter 12" Assorted Colors	$ 129.99	$ 129.99
Scooter Cart	1	Each	9-004936-201	Cart Scooter Stacker	$ 54.99	$ 54.99
Spot Marker	4	Set/6	9-1005401-201	Spot Markers Utility/Sequencing 10"	$ 18.99	$ 75.96
Tunnel	1	Each	9-006277-201	Tunnel SuperCrawl	$ 39.99	$ 39.99
					Total	$ 1,485.55

Approximate equipment prices. [Rev. 2-5-10 -ENP]

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1 Choose the Instructional Materials you want, and multiply by the quantity to find the subtotal

Equipment Set	Price		Qty.	Sub Total
Early Childhood Standard	$1,485.55	x		
Early Childhood Premium	$2,089.96	x		
After School Standard	$2,602.05	x		
After School Premium	$4,797.63	x		
K-2 Standard *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$3,253.47	x		
K-2 Premium *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$4,548.75	x		
3-6 Standard *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$3,226.46	x		
3-6 Premium *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$6,089.71	x		
K-6 Standard *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$4,494.81	x		
K-6 Premium *(purchase includes 1 year of access to SPARKfamily.org for up to 10 people - fill in emails on reverse side)*	$8,534.06	x		
MS Standard	$7,268.88	x		
MS Premium	$8,318.68	x		
HS Standard	$3,060.64	x		
Staff Wellness Standard	$1,400.22	x		
Customized List *(check which one)*: ❑ K-2 ❑ 3-6 ❑ K-6 ❑ MS ❑ HS ❑ EC ❑ AS ❑ K-6 ❑ CSH		x		

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HI, AK, & US Territories: *Parcel only shipping (7 & 9 Prefix); 20% or $15 minimum charge, whichever is greater*

Add Applicable Sales Tax or If tax exempt, please provide tax exemption # or attach your State Tax Exemption Certificate:
(all states except AK, DE, MT, NH, OR)

ORDER TOTAL

2 Choose your Method of Payment

Check or Money Order made payable to:
The SPARK Programs (Tax ID#: 39-0971239)

Check Number _____

Purchase Order Number _____

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Credit Card # _____

Expiration Date _____

Exact Name on Card _____

Signature _____

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State _____
Zip _____
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Agency Name _____
Address _____
City _____
State _____
Zip _____
Daytime Phone # _____
E-Mail Address _____

- Please allow up to 6 weeks for delivery
- Please supply an e-mail address; once your order is processed you will receive an order confirmation by e-mail.
- Please provide physical shipping address; will not deliver to PO boxes
- If shipping to International destinations, contact SPARK for current shipping rates.
- Once books are purchased in the quantity requested, SPARK cannot take them back and provide refund.
- Please do not provide a credit card number in your e-mail message!! The internet can be a wonderful tool, but unencrypted e-mail is not secure enough to protect your credit card number. We want you as a customer, but we don't want you in a position where you might give up important, private data like your credit card number.

For Internal Use Only

Order #: _____

Customer #: _____

EC Premium List

(Based upon 20 children) (*APPR.) (*APPR.)

Item	Qty	Unit	Item #	Description	Unit Price	Total
Bag	1	Set/6	9-030184-201	Bag Mesh Heavy Duty 12x18 (set)	$ 49.99	$ 49.99
Bag	1	Set/6	9-030187-201	Bag Mesh Heavy Duty 24x36	$ 69.99	$ 69.99
Ball	20	Each	9-009185-201	Softball Foam Coated Yellow	$ 3.99	$ 79.80
Ball	20	Each	9-009587-201	Ball Playground Super Safe 7"	$ 5.29	$ 105.80
Ball	1	Set/36	9-016451-201	Fluffballs 90mm	$ 13.49	$ 13.49
Ball	20	Each	9-1268772-201	Ball Beach Super Duty 16"	$ 1.19	$ 23.80
Balloons	1	Pk/144	9-003844-201	Balloon Round 15"	$ 26.99	$ 26.99
Bean Bag	2	Set/6	9-007339-201	Bean Bags Turtles Indestructible	$ 19.99	$ 39.98
Bean Bag	2	Set/6	9-026664-201	Bean Bags Indestructible Frogs	$ 19.99	$ 39.98
Bean Bag	4	Set/6	9-1004582-201	Bean Bag Utility /Sequencing	$ 14.29	$ 57.16
Boundary Markers	1	set/18	9-009784-201	Marker Boundary Directional Arrows	$ 46.79	$ 46.79
CD	1	Each	9-018472-201	Join Us Moving Please CD	$ 14.99	$ 14.99
CD	1	Each	9-052265-201	Can Cockatoos Count By Two's CD	$ 18.99	$ 18.99
CD	1	Each	9-1005019-201	Raffi In Concert CD	$ 18.99	$ 18.99
CD	1	Each	9-1005075-201	Kids In Motion CD	$ 17.29	$ 17.29
CD	1	Each	9-1005234-201	All Time Favorite Dances CD	$ 17.99	$ 17.99
CD	1	Each	9-325536-201	We All Live Together Vol. 2 CD	$ 17.29	$ 17.29
CD	1	Each	9-500450-201	Walter the Waltzing Worm CD	$ 19.99	$ 19.99
Cone	6	Each	9-716170-201	Cone Safety Vinyl 18"	$ 10.45	$ 62.70
Hoop	2	Set/12	9-005930-201	Hoop No Kink 24"	$ 54.99	$ 109.98
Hurdle	1	Set/5	9-009727-201	Hurdle Over/Under	$ 73.99	$ 73.99
Inflator	1	Each	9-087966-201	Mini Air Compressor 1/8 HP	$ 109.88	$ 109.88
Jump Rope	1	Each	9-007736-201	Jump Rope Nylon Ball Bearing 16'	$ 9.34	$ 9.34
Jump Rope	4	Set/6	9-018573-201	Jump Rope w/ Knot End 7'	$ 16.49	$ 65.96
Markers	1	Set/24	9-017895-201	Markers Flow	$ 27.99	$ 27.99
Paddle	4	Set/6	9-033078-201	Paddle PebblePop	$ 68.99	$ 275.96
Parachute	1	Each	9-1004535-201	Gripstarchute 20'	$ 99.99	$ 99.99
Ribbon Hoop	4	Set/6	9-022977-201	Ribbon Rainbow Hoop 12"	$ 43.99	$ 175.96
Scarf	2	Set/12	9-1004604-201	Scarf Juggling	$ 11.99	$ 23.98
Scooter Board	1	Set/6	9-715453-201	Board Scooter 12" Assorted Colors	$ 129.99	$ 129.99
Scooter Cart	1	Each	9-004936-201	Cart Scooter Stacker	$ 54.99	$ 54.99
Spot Marker	4	Set/6	9-1005401-201	Spot Markers Utility/Sequencing 10"	$ 18.99	$ 75.96
Tunnel	1	Each	9-006278-201	Supercross Crawl Tunnel	$ 113.99	$ 113.99
					Total	$ 2,089.96

Approximate equipment prices. [Rev. 2-5-10 -ENP]

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MS Standard	$7,268.88	x		
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Customized List *(check which one)*: ❑ K-2 ❑ 3-6 ❑ K-6 ❑ MS ❑ HS ❑ EC ❑ AS ❑ K-6 ❑ CSH		x		

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Add Applicable Sales Tax or If tax exempt, please provide tax exemption # or attach your State Tax Exemption Certificate:
(all states except AK, DE, MT, NH, OR)

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Address _____
City _____
State _____
Zip _____
Daytime Phone # _____
E-Mail Address _____

- Please allow up to 6 weeks for delivery
- Please supply an e-mail address; once your order is processed you will receive an order confirmation by e-mail.
- Please provide physical shipping address; will not deliver to PO boxes
- If shipping to International destinations, contact SPARK for current shipping rates.
- Once books are purchased in the quantity requested, SPARK cannot take them back and provide refund.
- Please do not provide a credit card number in your e-mail message!! The internet can be a wonderful tool, but unencrypted e-mail is not secure enough to protect your credit card number. We want you as a customer, but we don't want you in a position where you might give up important, private data like your credit card number.

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STEP 1: WHY HAVE A WORKSITE WELLNESS PROGRAM?

What is Worksite Wellness?

For the purposes of this resource kit, worksite wellness refers to the education and activities that a worksite may do to promote healthy lifestyles to employees and their families. This resource kit focuses on risk factors that affect obesity and chronic diseases and does not address safety issues and injury prevention, which have often been addressed in the worksite in the past. Examples of wellness programming include such things as health education classes, subsidized use of fitness facilities, internal policies that promote healthy behavior, and any other activities, policies or environmental changes that affect the health of employees.

Why Start a Company Wellness Program?

- **Wellness programs help control costs**
- **Increase productivity**
- **Reduce absenteeism**
- **Improve morale and enhance image for the organization**

Wellness programs can be simple or complex. Many programs require a minimal investment of time and money. More substantial programs often use more resources, but the many benefits to supporting and encouraging employee health and safety outweigh the costs.

STEP 2: HOW TO GET STARTED

Once an organization decides they want a Worksite Wellness program, the first question is often "What kinds of things should we do?" Before you have that discussion, you should lay the groundwork and get more information. A summary of what to do would include the following items, all of which are very manageable if you take them one step at a time:

How worksites can get started

1. Gain commitment from stakeholders such as senior management, human resource managers, staff members, etc. (Step Two)
2. Create a wellness committee that involves cross-sectional representation of your organization to help with the development, implementation and assessment of your wellness program. (Step Two)
3. Assess the needs of your worksite. Complete a worksite environmental assessment and conduct an employee interest survey to collect information on the topics that would be of most interest to staff. Gather other available data that might be helpful. (Step Three)
4. Look at the program strategies and resource needs. (Step Four)
5. Use the assessment, survey results and other data to prioritize your program components and to set goals and objectives. (Step Five)
6. Develop an action plan with appropriate strategies to address specified goals. Include a timeline, a budget, and an evaluation plan. (Step Five)
7. Market and implement the plan. (Step Five)
8. Monitor progress and make necessary changes. (Step Six)
9. Evaluate the outcomes. (Step Six)
10. Continue to revise the plan to maintain a healthy environment for all employees.

STEP 3: ASSESSING YOUR WORKSITE

Your worksite assessment should contain three main components:

Part 1: An assessment of the current worksite environment and policies, and
Part 2: An employee survey and/or other means for employee input to identify interests and the types of programming that will be used.
Part 3: Gathering of existing data that might be helpful in your decision-making.

HOW TO ASSESS THE WORKSITE WELLNESS ENVIRONMENT?

Why do an assessment?

The purpose of completing the assessment is to identify your worksite's strengths and areas in need of improvement. The assessment will lead your committee to recommend actions for changes to make the worksite more supportive of healthy behaviors (i.e. healthy food choices in vending machines, policies to enforce no smoking on worksite grounds or encouraging walking during break times). You may find some of the actions for supporting healthy behaviors are easy to do and others may not be feasible or efficient in your worksite. The assessment results can also be used as a baseline measure for evaluation. The initial assessment can later be compared with a follow-up assessment several months later to note progress. Complete the Worksite Wellness Assessment Checklist to determine what wellness components you currently have at your worksite. Once you have completed the assessment, determine which areas the organization will focus on. Completion of the checklist provides a reference point of the wellness policies, environmental supports and program activities that are currently in place or in process and it provides an overview of some of the items that should be considered for a comprehensive Wellness Program.

The next step is to have the employees complete the Worksite Wellness Survey, Appendix C. You should conduct an employee survey to get a better understanding of your target audience (your company's employees) and get an initial idea of their current health habits and interest areas. As was the case with the worksite environmental assessment, the employee survey results can also be used as a baseline measure for later evaluation. The initial survey results can later be compared with a follow-up survey several months later to note progress. You should also consider engaging employees in focus groups or informal interviews to gather information on their wants and needs. This can be done either before or after the survey, or if you don't have the resources to survey employees, you could use this method to gather information in place of the survey.

Whatever method you use to gather information, make it as easy as possible for employees to complete and submit the information so you get a high return rate. Consider offering an incentive or prize for people who complete the survey.

STEP 4: PROGRAMMING FOR MY WORKSITE

Step Four will provide you with background information for specific program strategies that you should consider. After reading through this chapter, you should go through the prioritizing exercise in Step Five to narrow your focus and put your written action plan in place. **DON'T PRIORITIZE YET –** wait until you have a good idea of what programming options are available and then choose the best options for your worksite.

Program Strategies

Now that you've completed the worksite assessment, employee survey and reviewed other available data and compiled the results, it's time to take a look at the program strategies that have been proven to work or are best practices from other worksites. For those programs or strategies that were checked as either in process or not existing at your worksite, you will have the opportunity to get an overview of the relative resource costs needed to implement the strategy and see what reference or resource materials are available to help with implementation. Refer to pages 26-27.

Communication is Key

Regardless of what programming you choose to do, communication is essential to make your program more successful. It is likely that there are some employees that are experienced in communications. Make sure you recruit them to be on the wellness committee.

There are many ways to get the word out about your program, including:

- Place information in the company newsletter
- Announce the wellness program through company-wide email
- Announce program information at staff meetings and electronically
- Promote monthly topics and screenings
- Provide educational/awareness trainings using local speakers or providers
- Place informational posters in the hallways or common areas
- Place information in payroll envelopes
- Organize a kick-off event or health fair as part of a larger initiative

STEP 5: MAKING DECISIONS - WHERE TO FOCUS YOUR EFFORTS?

WHAT DO I NEED TO CONSIDER?

As you make plans on where to focus your wellness efforts, consider that some efforts may have greater impact than others. Your wellness programming can include many components, such as:

- Health screening and assessment
- Education through presentations, printed materials and web resources
- Program activities, including "campaigns" over a specified time period
- Environmental change
- Policy change

Employee Readiness: Stages of Change and Program Considerations

A major factor to be aware of is that people vary greatly in their readiness to change behavior. You may want to use your survey of employees to identify what percent of employees are at the various stages so that you can gear your program accordingly. The specific survey questions that can identify the levels are identified at the end of this section.

Stages of Change. Most people go through five stages in changing behaviors:

- **Pre-contemplation** – At this stage they are not thinking about changing their behavior in the near future.
- **Contemplation** – They are beginning to seriously think about changing their behavior in the near future (next six months).
- **Preparation** – At this stage most people have tried to change their behavior at least once in the past year, and they are thinking about trying again within the next month.
- **Action** – Real steps are being actively taken to change their behavior. This is the stage where a slip is most likely to occur.
- **Maintenance** – This stage applies to people who have changed their behavior for over six months and are now maintaining that healthy behavior.

People can move from one stage to another in order, but they can also move back and forth between the various stages before they adopt a behavior for good. Again, a slip is not a failure, but an important part of the learning and behavior change process. Most people may attempt healthy behavior change several times before they succeed and the chance of success increases every time.

The pre-survey of employees (Appendix C) has questions for physical activity (Q #1), nutrition (Q #3) and tobacco use (Q #6) that ask what stage an individual is at. You should look at the results from these questions to better understand where your employees are at and tailor your programming accordingly. As an example, if the majority of employees are over 50 years of age

and are only moderately active, a graduated walking program might be a good place to start for physical activity programming.

Developing the Wellness Plan Content

One way to develop your program activities is to take your worksite assessment checklist and evaluate the areas where no policy or program exists or areas where some policy or program exists, but can be improved. For each of these items, ask the following questions:

- How important is the item?
- How much will it cost to implement the item?
- How much time and effort would be needed to implement the item?
- How great is the potential "reach" or how many employees may be affected.
- How well does the item match employee's interests and other relevant data? Use the survey results to help answer this question.

You should also "package" your activities whenever possible so that they build off of each other, rather than pick a set of unrelated activities that are not connected. By providing the right mix of programs, you can get a multiplier effect that is greater than the effect of adding up individual activities. "Packaging" related strategies will lead to greater participation and long term success. For instance, having a policy that encourages physical activity on break time, coupled with using pedometers as incentives and then providing maps or on-site trails to get staff out walking will lead to greater success.

RECOMMENDATIONS – NARROWING THE SCOPE

You can use the Recommendation Table below to help narrow the scope of your wellness program. Once you've identified possible areas to focus on, asking the questions about importance, cost, time, effort and reach should get you to a very specific set of activities to implement.

RECOMMENDATION TABLE - SAMPLE

Instructions: Rate each of the recommendations identified in the Worksite Wellness Assessment on the following aspects: importance, cost, time and commitment. Rate each on a scale of 1-5 (low-high) using the chart below. Higher scores should indicate priority items to implement.

Importance	How important is the recommendation? **1** = Not at all important **3** = Somewhat important **5** = Very important
Cost	How expensive would it be to plan and implement the recommendation? **1** = Very expensive **3** = Moderately expensive **5** = Not expensive
Time	How much time and effort would be needed to implement the recommendation? **1** = Extensive time & effort **3** = Moderate time & effort **5** = Low time & effort
Commitment	How enthusiastic would employees be about implementing the recommendation? **1** = Not enthusiastic **3** = Moderately enthusiastic **5** = Very enthusiastic
Reach	How many employees will likely be affected by this recommendation? **1** = Very few employees **3** = Some employees **5** = Most or all employees

Item #	Recommendations	Importance	Cost	Time	Commitment	Reach	Points / Ranking
18	Create policy for use of break & lunchtime to be active	4	5	5	4	5	23
23	Install bike racks to encourage biking to work	4	3	4	4	3	18
27	Provide an on-site exercise facility	5	1	1	5	3	15
42	Make microwaves available to heat meals	4	3	5	4	5	21

57	Policy to prohibit smoking on property	5	5	5	3	5	23

(A blank Recommendation Table can be found in Appendix D)

What can you do with this data? – Some examples.
If you have limited resources and can't implement all of your company's recommendations, you should look at total score and category scores to help select priorities. The policy items (#18 & #57) have low cost and great reach so they might be the items to implement first. On the other end of the spectrum, an on-site fitness facility (item #27) might be problematic because of cost and an alternative such as subsidized memberships to local physical activity facilities may be considered.

Be realistic!
Limit your initial set of activities so you can focus your efforts and have some early successes. You can always expand your program as it matures, but a realistic set of objectives to begin with will require fewer resources and will keep you from being overwhelmed.

ACTION PLAN & WORKSHEET

Once you've decided on your priorities, you should develop a specific action plan to implement the programming you've selected. The action plan would include:

- The overall goals and objectives of your wellness program.
- Specific recommendations on strategies to implement. These need to be clearly stated and measurable or your evaluation won't be meaningful;
- The chosen activities;
- The staff, resources and materials needed to make it happen;
- The time frame for completion;
- The evaluation plan to measure results.

The action plan can also be used as part of a presentation to give to management to sell them on your wellness program and get buy-in for the specific strategies and activities you plan to implement for the program.

MAINTAINING INTEREST & MOTIVATION

Once you start a program you will have a range of employee participants. Some will already be very engaged in being active, eating well and doing stress management and your program will only reinforce and enhance their health. On the other end of the spectrum will be people who may not engage no matter what you do. The remaining group is probably the largest group in most organizations: people who are various stages of readiness to improve their health given the right type of programming and motivation. Summarized below are some tips you may want to employ once your program is up and running.

Key Factors

In today's society there are many key factors that influence people's health behaviors. Consider the following list in maintaining participation in your program:

1. TIME. People are busy, so the more you can work activity and healthy eating into their existing schedules, the better your chances for success. Example: A walk at lunch doesn't take away from existing time, it just uses it differently. Also look at the time of the day and length of any activity you might be promoting, since both time components may be factors.
2. ACCESS. How accessible is your programming. Is it onsite or at a nearby site? Do you offer access at breaks or outside of normal work hours?
3. KNOWLEDGE. People need to know "Why" they are participating (the benefits) and also will need information about the "How to" in areas that are not commonly known. There is a wealth of information available on many wellness topics that can be found in the resource sections in Step Four.

4. COST. Being able to provide no cost or reduced cost programs will help participation rates. Coupled with incentives for participation, rates of participation will likely increase dramatically.
5. INCENTIVES. Some people need incentives to get started in a wellness program. A full list of incentive options can be found on the next page.

Key Time Periods

Good habits are often difficult to develop. There tends to be some critical times when people drop out or fall off of a physical activity or diet program. The first key time zone seems to be around **6 weeks**. If people can start and stay consistent with a program through the first 6 weeks, they have made a fairly serious commitment to incorporate the habits into their lifestyle. The second key time is at about **6 months**. Those who made it past 6 weeks may get bored and/or distracted from their program after several months. If people can get past 6 months and sustain behavior through a full set of weather seasons, they have a very good chance of making the changes permanent.

Consider these time periods and think about how you can "boost" your employees to get them past these critical time markers. Promoting individual or group "challenges", using incentives, or increased publicity/marketing are a few of the things you can do to help get your employees through these key time periods

Goal Setting

Setting goals has been shown to lead to better participation and more people making a strong commitment. Whether it be a team goal of walking the equivalent of once around Wisconsin or an individual goal of so many miles or minutes of activity, the fact that there is something concrete to shoot for increases the likelihood people will stick with the program. An example of a simple goal setting form can be found at
http://www.americanheart.org/downloadable/heart/1118082632055ActivityGoals.pdf

Buddy Systems or Team Goals

The social aspects of improving one's health cannot be underestimated. Many studies point to tight social groups being the backbone for a successful campaign because each individual has a commitment to something bigger than themselves and besides, it's just more fun for most people. Build your program around some type of teams or partners and see what happens.

Team "Campaigns"

Some people like competition and others don't. Nevertheless, a worksite wide campaign has the advantage of keeping the message more visible and alive. Encourage campaign participation, but make it voluntary so that those who prefer that type of motivation can join while others can participate in their own way and at their own pace. If the idea of a campaign seems like too much work, consider tapping into existing campaigns where someone else provides resources for you. Lighten Up Wisconsin is one example where you can enroll employee team and let Lighten Up do the work for a nominal registration fee.

A special consideration for campaigns is whether you do one long (several month) campaign per year or do several shorter (4-6 weeks) campaigns during the course of the year. There are advantages to both, but multiple, shorter campaigns have the following benefits:

- keeping programming fresh
- being able to target different health habits
- keeping people interested and motivated
- recruiting participants more often as new health habits are targeted over the course of the year

Incentives

Incentives are often helpful in maintaining or raising interest. Significant incentives such as cash or health insurance rebates have proven to be very strong motivators for employee participation. However, even smaller incentives can be beneficial. Listed below are some sample incentives that will support your wellness program vision:

- **Achievement awards.** Verbal praise and a pat on the back are motivational to some, but a token of recognition of achievement may offer more. A colorful certificate to congratulate an employee for achieving a health-related goal is one example.
- **Public recognition.** Announced recognition at campaign mid-point or wrap-up festivities.
- **Food.** Include some healthy foods to kick-off, revitalize or wrap up a wellness campaign.
- **Entertainment.** Events serve a purpose in jump-starting, reenergizing or wrapping up a campaign. Having entertainment of any kind can boost morale.
- **Merchandise.** There is a long list of merchandise incentives, including sports equipment and small gift certificates to use at local merchants.
- **Monetary rewards.** Nothing says incentive better than cash. Worksites that have used cash or rebates as an incentive have shown much higher participation rates.
- **Time off.** Maybe the next best incentive to cash, or for some people even better. This type of incentive makes good business sense if the number of absences drops significantly and attendance is used as one of the criteria.

STEP 6: EVALUATING MY PROGRAM: IS IT DOING ANY GOOD?

At the beginning of this resource kit we listed reasons for having a worksite wellness program. That list included reduced health care costs, increased productivity, decreased absenteeism and improved employee health and morale. In setting up your wellness program, you need to also think about how you are going to evaluate your program. Evaluation will provide you with information to modify your program to better meet your employee needs and to measure whether employee's attitudes, behaviors and health indicators have changed as a result of your program.

EXTENDING INTO THE HOME

Also included with this material is Appendix F: Extending into the Home. You can get greater effects from your worksite wellness initiative by extending them into the home setting. People can do things individually or together as a family to improve eating habits and increase physical activity levels.

APPENDIX C - WORKSITE WELLNESS SURVEY

Sample Survey or Pre & Post Test

Worksite Wellness Survey

Wellness Questions

1. **Current physical activity level.**
   Please read the statements below. Select the number of the statement that best describes your current level of physical activity. When considering time spent being active, count any time you are active for at least 10 minutes at a time. In other words, if you have three 10 minute “bouts” of activity in a day, record that as 30 minutes in a day. "Vigorous" exercise includes activities like jogging, running, fast cycling, aerobics classes, swimming laps, singles tennis and racquetball. These types of activities make you sweat and make you feel out of breath. "Moderate" exercise includes activities such as brisk walking, gardening, slow cycling, dancing, doubles tennis or hard work around the house.
   - ☐ I don't exercise or walk regularly now, and I don't plan to start in the near future.
   - ☐ I don't exercise or walk regularly, but I've been thinking about starting.
   - ☐ I'm doing moderate or vigorous physical activities for at least 30 minutes on some days, but fewer than 5 days a week.
   - ☐ I've been doing moderate or vigorous physical activities for at least 30 minutes in a day, on five or more days a week, and have been doing it for the last 1 to 6 months.
   - ☐ I've been doing moderate or vigorous physical activities for at least 30 minutes in a day, on five or more days a week, and have been doing it for 7 months or longer.

2. **When do you get most of your physical activity each day?**
   - ☐ Before work
   - ☐ During work hours on break and lunch times
   - ☐ After work
   - ☐ None of the above. I am not physically active or am only active on weekends.

3. **Fruits and Vegetables.**
   Please read the statements below. Select the statement that best describes your current intake of 100% juices and fresh, frozen and/or dried fruits and vegetables. A serving is ½ cup or 1 medium piece of most fresh or frozen fruits and vegetables, 6 ounces of 100% juice and ¼ cup of dried fruits or vegetables.
   - ☐ I don't eat fruits and vegetables regularly now, and I don't plan to start in the near future.
   - ☐ I don't eat fruits and vegetables regularly, but I've been thinking about starting.
   - ☐ I'm eating some fruits and vegetables a day (total of 2 servings or less)
   - ☐ I've been eating fruits and vegetables every day (total of 3 or more servings), for the last 0 to 6 months.
   - ☐ I've been eating 5 or more servings of fruits and vegetables every day, for more than 6 months.

4. **Fat in Foods.**
   Please read the statement below. Select the statement that best describes your current intake of low fat foods.
   - ☐ I don't worry about the fat content of the food I eat & I don't plan to in the near future.
   - ☐ I eat high fat foods daily, but I've been thinking about trying to reduce my intake.
   - ☐ I limit my intake of high fat foods to 1-3 times/week.
   - ☐ I eat high fat foods less than once/week and have been for the past 6 months.
   - ☐ I eat high fat foods less than once/week and have been for more than 6 months.

5. **Whole grains.**
   Please read the statements below. Select the statement that best describes your current intake of whole grain foods. The serving size for whole grains is one ounce (ex. 1 slice of bread, 1 oz. of cereal, ½ cup of cooked rice or pasta.
   - ☐ I don't cook, eat or purchase whole grain foods now, and I don't plan to start in the near

future.

- ☐ I don't cook, eat or purchase whole grain foods regularly, but I've been thinking about starting.
- ☐ I'm cooking, eating or purchasing whole grain foods 3-4 times a week.
- ☐ I've been cooking, eating or purchasing whole grain foods every day, for the past 1 to 6 months.
- ☐ I've been cooking, eating or purchasing at least 3 servings of whole grain foods every day, for 7 months or longer.

6. Tobacco Use.

Please read the statements below. Select the statement that best describes your current tobacco use.

- ☐ I don't smoke
- ☐ I'm not thinking about quitting, at least not in the next six months.
- ☐ I'm thinking about quitting someday, but not right now.
- ☐ I want to quit within the next month or two, and I want to know more about how to do it.
- ☐ I have just quit and I am going through withdrawal. (Action)
- ☐ I have quit smoking and I want to know more about how to never smoke again.

7. Anxiety.

About how often during the past 30 days did you feel nervous or anxious: would you say **all** of the time, **most** of the time, **some** of the time, **a little** of the time or **none** of the time?

- ☐ All
- ☐ Most
- ☐ Some
- ☐ A little
- ☐ None
- ☐ Don't know/not sure

8. Depression.

About how often during the past 30 days did you feel sad, blue or depressed- would you say **all** of the time, **most** of the time, **some** of the time, **a little** of the time or **none** of the time?

- ☐ All
- ☐ Most
- ☐ Some
- ☐ A little
- ☐ None
- ☐ Don't know/not sure

PARTICIPANT INTEREST AREAS

9. Please rate your interest in any of the following individual physical activity resources for that might be available.	Very Low	Low	Neutral	High	Very High
a. Attending regular presentations on physical activity topics					
b. Receiving regular physical activity tips via email					
c. Having access to web resources on physical activity					
d. Getting information on existing activities in the area					
e. Point of decision prompts to help you be active (stair/elevator signs)					

10. What physical activity topics are you interested in learning more about?					
11. Please rate your interest in any of the following group physical activity resources for that might be available.	Very Low	Low	Neutral	High	Very High
a. Joining small groups for regular activity (walking groups, yoga class)					
b. Forming clubs for particular physical activities					
c. Discounted memberships at local health clubs, recreation centers, etc.					
d. Participating in a division-wide fitness program initiative with friendly competition between groups					
12. Please rate your interest in any of the following nutrition resources that might be available?	Very Low	Low	Neutral	High	Very High
a. Attending regular presentations on nutrition topics					
b. Receiving regular healthy eating tips via email					
c. Having access to web resources on nutrition/healthy eating					
d. Getting information on existing food/diet groups in the area					
e. Recipes/healthy meal ideas					
f. Point of decision prompts to help you eat well (i.e. strategically placed healthy eating reminders)					
g. Joining small groups for regular information on diet (ex. Weight Watchers)					
13. What nutrition topics are you interested in learning more about?					
14. Please rate your support for any of the following policy or environmental worksite changes.	Very Low	Low	Neutral	High	Very High
a. Review healthy food options for the cafeteria & vending machines; healthy food options labeled					
b. Develop an organization recommendation on food choices for meetings and conferences					
c. Not schedule meetings within the organization on a specific day/time to allow for open time for wellness activities					

d. Provide preventive wellness screenings (blood pressure, body composition, blood cholesterol, diabetes)					
e. Provide Health Risk Appraisals					
f. Provide incentives for participation					
g. Develop policies to support breastfeeding women					
15. Please rate your interest in any of the following mental health resources that might be available?	Very Low	Low	Neutral	High	Very High
a. Attending regular presentations on mental topics					
b. Receiving regular mental health tips via email					
c. Having access to web resources on mental health					
d. Getting information on existing mental health groups in the area					
e. Joining small groups for regular stress reduction classes (relaxation or yoga classes)					

16. If more opportunities were available for wellness at the worksite, when would be the best time for you? Check all that apply:

- ☐ Before work
- ☐ During the workday on break and lunch times.
- ☐ After work.
- ☐ None of the above. I'm not interested in any physical activity or nutrition programming at work.

17. What other things could be done in the worksite to help promote wellness? What would you like to see?

Demographics. We would like to get some demographic information as background. The following questions are optional, but will really help tailor programs and potentially group areas of common interest.

18. Gender

- ☐ Male
- ☐ Female

19. Age

- ☐ <20
- ☐ 20-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60+

20. Work Unit (customize if units are defined in the organization)

- ☐ Administration
- ☐ Regional staff
- ☐ 1st shift

Note: Questions #1 (Physical Activity), #3 (Fruit and Vegetable Consumption) and #6 (Tobacco Use) all have answers corresponding to employee "readiness" and the stages of change described in Step 5 on page 34. You may want to see how many employees are at the various levels in deciding how to address the health behavior you want to improve.

Core Wording from questions 1, 3 and 6:

- I don't ……. regularly now, and I don't plan to start in the near future. (Precontemplation)
- I don't ……. regularly, but I've been thinking about starting. (Contemplation)
- I'm ……a day (x / week, but not daily) (Preparation)
- I've been …… every day for the last 0 to 6 months. (Action)
- I've been ……. every day, for 6 months or longer. (Maintenance)

Remove this section prior to using this survey tool.

STAFF WELLNESS PROGRAM - SUGGESTED EQUIPMENT LIST

Equipment	Approximate cost per item
Xerball – 10 lbs.	$60.00
Dumbbell	
1 lb.	$ 4.00 per pair
3 lb.	$ 10.00 per pair
5 lb.	$ 17.00 per pair
10 lb.	$ 34.00 per pair
12 lb.	$ 45.00 per pair
Dumbbell Wall Chart	$ 15.00
Xertube	
Light Resistance	$ 10.00 $ 30.00 roll
Medium Resistance	$ 10.00 $ 30.00 roll
Professional Xercise Ball	
45 cm	$ 33.00
44 cm	$ 33.00
Xerball Wall Chart	$ 15.00
Yoga Mats	$ 13.00
Jump Ropes	$ 4.00
Pedometers	$ 12.00
Timers	$ 6.00

Exercise Library is available from American Council on Exercise (ACE).
Source of equipment is from SPRI, Gopher Sport, or Perform Better. Equipment can also be purchased locally from any store that sells fitness equipment.

SAMPLE: Child Care Physical Activity Policies

In an effort to provide the best possible physical activity environment for the children in our facility, we have adopted the following policies. The administration and staff appreciate support from the parents in promoting the health of our children.

Active Play and Inactive Time

- ☐ We provide at least 120 minutes of active play time to all children each day.
- ☐ We provide opportunities for outdoor play 2 or more times per day.
- ☐ We ensure that children are rarely seated for periods of more than 30 minutes.
- ☐ We do not withhold active play time for children who misbehave. Instead, we provide additional active play time for good behavior.
- ☐ We rarely show television and videos.

Play Environment

- ☐ We provide fixed play equipment (tunnels, climbing and balancing equipment) that is extensive and varied for all children.
- ☐ We provide portable play equipment (wheeled toys, balls, hoops, ribbons) that is diverse and available for children to use at the same time.
- ☐ We make outdoor portable play equipment freely available to all children all of the time.
- ☐ Outdoor play space includes an open, grassy area and a track/path for wheeled toys.
- ☐ Indoor play space is available for all activities, including running, when weather does not permit outdoor play.

Supporting Physical Activity

- ☐ Our staff often encourages children to be active and often join children in active play.
- ☐ We provide visible support for physical activity in 2 – 5 year old classrooms and common areas through use of posters, pictures, and displayed books.

Physical Activity Education

- ☐ We provide training opportunities for staff on physical activity (other than playground safety) 2X per year or more.
- ☐ We provide teacher-directed physical activity education for children, through a standardized curriculum, 1X per week or more.
- ☐ We offer physical activity education to parents 2X per year or more.

SAMPLE: Job Description Physical Activity Component

National Standards for Physical Education

1. Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.

2. Demonstrates understanding of movement concepts, principles, strategies and tactics as they apply to the learning and performance of physical activities.

3. Participates regularly in physical activity.

4. Achieves and maintains a health-enhancing level of physical fitness.

5. Exhibits responsible personal and social behavior that respects self and others in physical activity settings.

6. Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

Job Description should include the following:

Teacher addresses physical activity education with appropriate practices in:

- Instruction (developmentally appropriate and sequenced properly),
- knowledge of evidence of student learning (there is ongoing formal and informal assessment),
- management/organization of class and curriculum alignment (safety of students, developmentally appropriate equipment accessible and utilized, and children are engaged),
- the learning climate (lifelong physical activity promotes success and enjoyment), and
- professionalism (teacher models appropriate appearance and behavior).

PROGRAM IMPLEMENTATION TIP SHEET

Strategies:

- "Buy in" to it and encourage the staff
- Be familiar with the research behind it
- Lead the effort by being a role model
- Identify key staff to facilitate implementation
- Don't label as an initiative – instead, call it a "proactive and preventive Approach" or "movement"
- Seek out community partners that may have current movements and can support your efforts and share resources on childhood obesity such as local hospitals, doctors or clinics
- Use the "movement vocabulary" across all programs
- Examine current program practices and update them to reflect this approach (e.g. menus, newsletters, parent boards, etc.)
- Invite role models or characters to visit your program (e.g. use characters in costume, home-made dolls, puppets and/or stuffed animals, celebrities in the community)
- Develop your own "program-made" resources that share these messages in fun ways such as a staff or parent-made video (making healthy choices) or CD's of songs that foster motion that can be shared with families, etc.
- Think about planning expanded opportunities that actively involve both parents and children together to get more exercise. (ex. Add a physical activity column in your newsletter that contains ideas for moving together)
- Sponsor child/parent events in the evenings or Saturdays that would combine cooking nutritious meal or snack and then some physical activities they can do together.
- Provide continuous staff training. Better yet, sponsor a staff challenge or staff incentive for increasing physical activity; if budget permits, include health club incentive as a part of benefits choices.
- Introduce it at a Parent, Staff or Board Orientation.
- Communicate support to staff for what they already do, document it, and support them by enhancing what they do, so they can do it better
- Provide a mechanism for staff to document what they are already doing in this area
- Develop appropriate a manageable monitoring, preferably within the context of current systems, i.e., measure time spent in Moderate to Vigorous Physical Activity (MVPA)
- Focus on the positive marketing strategies for parents, staff, and community and include the parents in the planning
- Determine how to support staff in implementing this approach
- Help teachers and staff see this approach as integrated into what they are already doing and add resources to support them

- Give an award to staff who show progress, i.e. “motivational mover and shaker of the month”
- Ensure that the messages are conveyed consistently across all program options and inclusive of all children
- Tie it proactively to preventive health/mental health for staff wellness
- Emphasize to Teachers – this is not new, just notched up and intentional
- Correlate physical activity education to the gross motor area of your lesson plan
- Intentionally plan and develop goals by individualizing goals for each child
- Incorporate “movement vocabulary” into themes
- Link this approach to your curricular framework
- Provide concrete examples to implement the actions, movement concepts and movement vocabulary
- Encourage Teachers to “pump up the volume” and integrate movement into dramatic play (e.g. Three Little Pigs)
- Provide targeted training for Teachers on special needs from Physical Therapists/Occupational Therapists
- Use an observation tool to evaluate what happens and changes in the classroom
- Use a family survey tool to evaluate what happens and changes that the family has made
- Review the schedule for whole or half day and plan for increased high quality moderate to vigorous physical activity (MVPA)
- Make referrals based on observations of teacher interactions, teacher participation, physical activity behaviors and communication with children
- Sell the “learning” associated with movement to parents and families
- Believe in the messages
- Get the messages out and tell everyone the benefits
- Promote wellness among staff
- Encourage individual and community gardening
- Encourage “pulling the plug” on the TV/Computer
- Do Community Mapping for “free” physical movement space
- Be culturally aware and sensitive
- Model and demonstrate strategies for the Teachers
- Be familiar with the research on brain development and best practices
- Convey the positive impact of structured movement on children’s behaviors
- Use Prop Boxes, “Make N’ Take”, and home activity bags and include Parents and Teachers
- Use tools that are literacy friendly
- Provide training for parents
- Provide ongoing involvement to support positive change for families
- Allow ideas to develop from parents
- Provide “Coaching” opportunities for families to coach children in MVPA and nutrition

- Involve Fathers
- Use bike trails
- Maximize your environment, your routines, and your time – e.g. Walk vs. drive, take stairs vs. elevators, park at the far side of the parking lot and walk!
- Seek out free recreational activities
- Watch less and watch wise
- Do “tummy time” with babies before bed
- Support parent mentoring and sharing of ideas
- Provide social experiences for parents
- Call it “MVPA” Mom & Dad instead of “Soccer” Mom & Dad!

Having Trouble getting your kids outside?

According to the American Academy of Pediatrics (AAP), lifestyles learned as a child are more likely to become adulthood habits. For this reason, it is important to start getting your children into sports and physical activities early in life. It is also recommended that a child should not be seated for more than 30 minutes at one time unless they are sleeping or eating. AAP suggests that structured, or led, physical activity should come in 15 to 20 minute increments. This means it's time to get your kids up and away from the computer, television and video games that they love so much and show them all of the active play that will teach them how to socialize with others and increase motor skills.

Steps you can take to increase your family's physical activity time

- Limit TV viewing for the entire family. AAP recommends less than 2 hours of screen time each day for children. This may be a sacrifice for adults but it's best to lead by example and limit your screen time as well.

- Find a fun activity. Your daughter and son may not see eye to eye on sports so rotate activities. This will allow the child who chose the sport to share their "expertise" with their family as well as being a learning experience for the others.

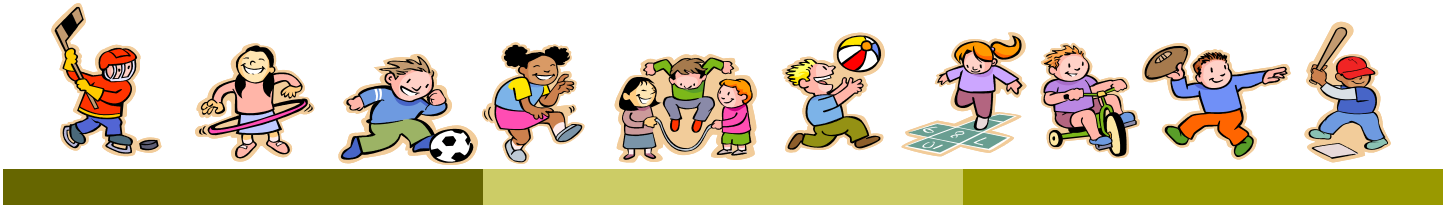
- Set special days such as "pool day", "sledding day" or "kid's day" and allow for your child to choose the activity. This will be a fun way to get your family involved and see what activities they really enjoy participating in.

- Think outside of the box; not all active play is running around the yard or riding a bike (although very fun!). Take a trip to the zoo — this will ensure walking for a couple of hours. You can go on a family outing to go horseback riding or go for a hike at a nearby park.

- Do not over do it. Kids can get burned out easily. Let them know that physical activity is not supposed to hurt and if it does, slow down or engage in less vigorous activities.

Did you know???

According to Head Start Body Start: National Center for Physical Development and Outdoor Play, young children's physical activity level is an important contributor to their early brain development and learning.



Outdoor Fun with the Family

With just a few toys you already have laying around the house, you and your family can make fun memories while being active and healthy.

- **Pool Noodles**
  - *Tug of War*—this is a wonderful group activity for a family. Try kneeling, standing and sitting. This will allow for different challenges while still increasing muscular strength and endurance
  - *Noodle Limbo* — Fun for the whole family. Adults start by holding the ends of the noodle and the kids take turns walking under the noodle. Place the noodle at various levels to see how low the kids can go without eliminating anyone

- **Hula Hoops**
  - *Hoop Toss*—You will need different household items for this game. Fill a milk jug or 2 liter bottle with sand or something heavy to weigh it down. Then toss the hoop to land around the target. Start close then take steps back to increase the throwing distance
  - *Jumping Around* — lay several hula hoops in a circle. It is okay if they are touching. Each kid stands in their only hula hoop and when the music starts then hop/dance from hoop to hoop. When the music stops then strike a pose, then continue when the music starts again.

- **Beach Balls**
  - *Batter Up* — place a beach ball on top of a cone and allow children to hill the ball with a wiffle ball bat. If there are more children, have them try to catch the ball before it hits the ground.
  - *Musical Beach Ball* — just like in musical chairs, children will dance around until the music stops then will sit on the beach ball. When the music starts again, call out a different action such as skip, jump, gallop, slide, etc. for the children to do while the music is playing.

Active Families Make Healthy Families

Why is physical activity important??

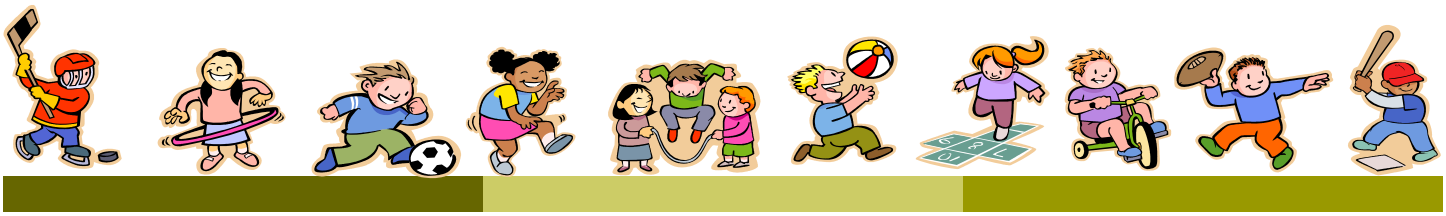
It is a well known fact that kids have more energy than we often know what to do with . Take this opportunity to create fun physical activities for you to participate in with your children. When children engage in led activities they are able to increase motor skills and acquire social skills while interacting with other children and adults. Also, children learn by example and when adults engage in physical activities, children are prone to adopt these same healthy behaviors. Remember, adults should get 30 minutes of physical activity in each day and children require 120 minutes per day; therefore participating in these activities with your kids will benefit your health as well!

Avoid having a family of couch potatoes...

- Set a good example and be active
- Schedule fun physical activities for the family to do together on a daily basis
- Bring back your childhood favorites — purchase hula hoops, jump ropes and beach balls to use for indoor and outdoor activities
- Limit screen time — this includes video games, computers and television

Indoor Activities for the Family

- Indoor Blizzard
  - Supplies: 10 balls of paper; laundry basket or box
  - Set up: place all paper balls in the middle of the play space and place laundry baskets or boxes around the perimeter of the room.
  - Play: Have your child toss the paper balls into each basket/box. After all balls have made it into the baskets/boxes, collect and do again. Make the game fun by moving the targets closer and farther away from the child.
- Obstacle Course
  - Supplies: chairs, beach balls, laundry baskets, canned foods
  - Set up: stage an obstacle course around the house using chairs to walk around, laundry baskets to throw beach ball in or use paper balls from Indoor Blizzard, and set cans on the floor for children to move around (figure 8 motion) while tossing a beach ball in the air and catching it
  - Play: Changing the obstacles for your child will help keep them alert and keep the activity fun! Have them skip, walk backwards, crawl , bounce or toss a ball while completing different obstacles.



Toddler Time

Physical activity is important at all ages, including pre-school age. Having your young children engage in physical activities will allow for them to release their natural energy in a productive way. These activities also teach your pre-school child better habits early in life. It is important to set a good example as the adult and participate in physical activities as well. Young children learn by example and seeing adults participate will trigger their will to participate in these fun activities.

WINTER TIME ACTIVITIES

- *Do Three With Me* is a fun activity that can be done anywhere; whether you are preparing dinner or standing in the line at the grocery store. Tell your child three (3) actions or movements and have them act out the actions along with you. For example, reach up high, touch the floor, hop like a bunny. As you and your child act out each movement, encourage them to come up with the next movement. This activity can also enhance their vocabulary and sequencing skills.

- *Balloon Batting* is a great activity for younger children. Using a paper towel roll as a bat, have your child hit an inflated balloon like a baseball player. Then when it is your turn to this the ball, have your child catch the balloon before it hits the ground. This activity is a good way to practice hand eye coordination without the worry of breaking a window!

- *How do you* is a wonderful activity for children. Their imaginations are endless and this allows for the child to act out their favorite animals and everyday items. Ask your child to show you how to “soar like a plane,” “pounce like a lion,” “walk like a robot,” and “walk like a duck.” This will really get them smiling and moving around.

Toddler Time: Fun in the Sun

As adults, it is important to be good role models for our preschoolers. Participating in physical activity will allow our children to see how you enjoy exercising and this will reinforce the idea that being active is better than screen time. Preschool aged children should receive 60 minutes of structured time, i.e. led activities, and 60 minutes of unstructured activities, i.e. child's own play time. Next time you and your child have activity time, go outside and enjoy the outdoors. According to Head Start Body Start: National Center for Physical Development and Outdoor Play, 9% of all children between the ages of 1 and 21in the US are deficient in Vitamin D. The sun is the primary provider for Vitamin D so all the more reason to take your activities outdoors!

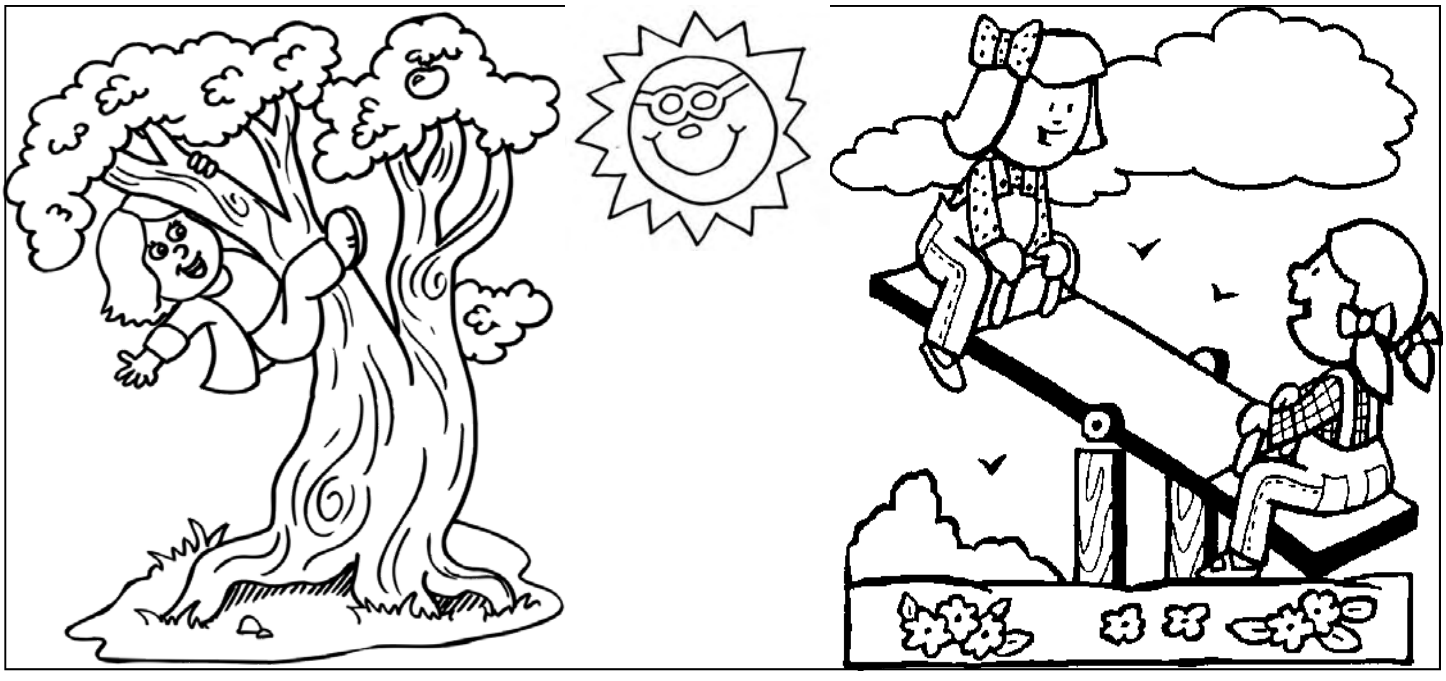
OUTDOOR ACTIVITIES

Shape it and Make it

- Supplies: Sidewalk chalk; outdoor area to draw on
- Activity: Draw a shape on the sidewalk with your chalk such as a circle, a "T" or an "X" and have your child mimic the shape of that letter but laying on the ground and tracing the letter with their body.

Rainbow Run

- Supplies: space to run around outside (i.e. yard, park)
- Activity: Practice the colors of the rainbow by calling out a color and having your child run to touch 2 items that are the same color. This is a great way to practice colors with your young child and also get in a physical activity.



MyPyramid for Preschoolers

Use MyPyramid to help your preschooler eat well, be active, and be healthy.

MyPyramid for Preschoolers is for children 2 to 5 years of age. Click on the blue button to get a customized MyPyramid Plan for your preschooler.

MyPyramid Plan

You are the most important influence on your child. You can do many things to help your children develop healthy eating habits for life.

Explore ways to help your preschooler:

- **Grow up healthy.** Complete a growth chart especially for your child to find out more about normal development.
- **Develop healthy eating habits.** Raise a healthy eater by setting a good example and practicing positive habits.
- **Try new foods.** Help for picky eaters.
- **Play actively every day.** Add physical activity into your preschooler's day.
- **Follow food safety rules.**

Learn more:

- **Sample Meals Patterns, Meals and Snacks**
- **Find Kitchen Activities for preschoolers**
- **Search for More Information.**
- **Be a Healthy Role Model for Children — from the MyPyramid Ten Tips Nutrition Education Series**

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Last Modified:

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USDA # | QUANTITY | ITEM DESCRIPTION

- USDA111 [ ] USDA Recipes for Child Care (Qty limit: 1)
- USDA184 [ ] Empowering Youth (Qty limit: 1) (Middle and High Schools Only)
- USDA181 [ ] Food for a Day Poster (Qty limit: 2) (Middle and High Schools Only)
- USDA157 [ ] Fruit & Vegetable Challenge Packet (Qty limit: 2)
- USDA150 [ ] How Much Do You Eat Poster (Qty limit: 2) (Middle and High Schools Only)
- USDA131 [ ] It's Up to Your Poster (Qty limit: 2)
- USDA119 [ ] Move it Poster (Qty limit: 2)
- USDA173 [ ] MyPyramid for Kids Classroom Materials-Level1-Grades 1 and 2 (Qty limit: 1)
- USDA175 [ ] MyPyramid for Kids Classroom Materials-Level3-Grades 5 and 6 (Qty limit: 1)
- USDA116 [ ] MyPyramid for Kids Poster (Qty limit: 1)
- USDA189 [ ] MyPyramid for Preschoolers Poster (Qty limit: 1)
- USDA167 [ ] MyPyramid Mini-Poster (Qty limit: 1) (1 pkg = 25)
- USDA169 [ ] MyPyramid Poster (Qty limit: 2) (Middle and High Schools Only)
- USDA180 [ ] Nutrition Essentials (Qty limit: 1) (Middle and High Schools Only)
- USDA166 [ ] Popular Team Nutrition Events (Qty limit: 2)
- USDA147 [ ] Read It Poster (Qty limit: 2) (Middle and High Schools Only)
- USDA171 [ ] Tips for Families (Qty limit: 1) (1 pkg = 25)
- USDA195 [ ] Power Your Moves Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA196 [ ] Pack Your Snacks Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA197 [ ] Power Up with Breakfast Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA198 [ ] Rustle Up Good Grub Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25

- USDA199 [ ] Move More Sit Less Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA200 [ ] Panther's Picnic Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA190 [ ] Nibbles for Health (Qty limit: 1)
- USDA54 [ ] Team Up At Home (Qty limit: 25)
- USDA182 [ ] Enjoy Moving Activity Pyramid Poster (Qty limit: 2)
- USDA183 [ ] Enjoy Moving Activity Pyramid Flyer (Qty limit: 1) 1 pack = 25 copies
- USDA208 [ ] SPANISH-Pointers to Help Your Preschooler (Qty limit: 1) 1 pkg = 50
- USDA209 [ ] Let's Go On A Snack Hunt Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA210 [ ] Enter the Fun Zone Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA211 [ ] Power Up to Gear Up Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA212 [ ] Balance Your Day With Food And Play Activity Sheet - English & Spanish (Qty limit: 1) 1 pkg = 25
- USDA213 [ ] Grab Quick and Easy Snacks Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA214 [ ] Be An All Star Activity Sheet - English-Front & Spanish-Back (Qty limit: 1) 1 pkg = 25
- USDA215 [ ] Two Bite Club (Qty limit: 6)
- USDA206 [ ] Tools for Schools (Qty limit: 5) Food Buying Guide / Menu Planner Dual Mailer
- USDA217 [ ] Grow It, Try It, Like It Kits (Qty limit: 1)
- USDA218 [ ] HealthierUS School Challenge Brochure (Qty limit: 1) 1 pkg = 25
- USDA219 [ ] HealthierUS School Challenge Application Kit (Qty limit: 1)

FOR FOOD SERVICE ONLY

- USDA154 [ ] Fruits and Vegetables Galore (Qty limit: 1)
- USDA161 [ ] Offer versus Serve Resource (Qty limit: 1) (Available for School Districts Only)
- USDA178 [ ] Recipes for Schools (Qty limit: 1)

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